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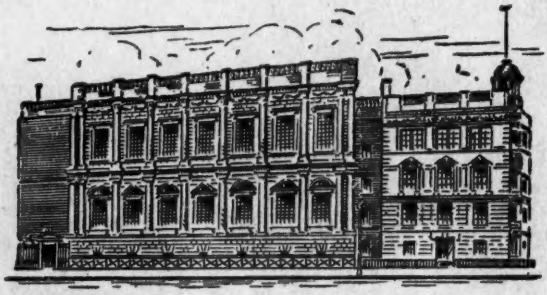
JOURNAL



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December 31st, 1932

LIABILITIES	£	£
Current, Deposit and other Accounts, including Reserve for Income Tax and Contingencies and Balance of Profit and Loss	368,084,287	
Balances in Account with Subsidiary Banks	13,762,323	
		381,846,610
Acceptances and Endorsements, &c., for account of Customers		6,279,470
Paid-up Capital		15,858,217
Reserve Fund		10,250,000

ASSETS	
Cash in hand, and with the Bank of England	51,680,992
Balances with other British Banks and Cheques in course of collection	10,663,887
Money at Call and Short Notice	24,817,550
Bills Discounted	66,289,257
Investments at or below market price	87,351,718
Investments in Subsidiary Banks (at cost, *less* amounts written off) :—	
The British Linen Bank—£1,239,044 Stock	3,717,132
Union Bank of Manchester Limited—300,000 Shares of £5 each, £2 10s. paid	750,000
Other Subsidiary Banks—(including fully paid Shares and 500,000 "B" Shares of £5 each, £1 per Share paid up, in Barclays Bank (Dominion, Colonial and Overseas) and 1,000,000 Shares of £1 each, 5s. per share paid up, in Barclays Bank (France), Limited)	2,229 255
Advances to Customers and other Accounts	153,158,668
Liability of Customers for Acceptances and Endorsements, &c.	6,279,470
Bank Premises and Adjoining Properties (at cost, *less* amounts written off)	7,296,368

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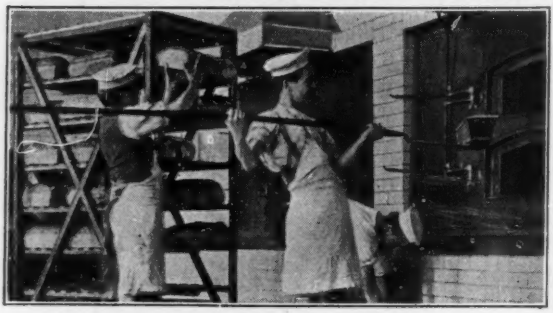

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February, 1933.

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The Anniversary Meeting will be held on Tuesday, 7th March, at 3.30 p.m. The Council will present their Annual Report and Accounts, and there will be an election to fill the vacancies on the Council. The Gold Medal will be presented to the winner of the 1932 Essay Competition.

Copies of the Annual Report and Accounts can be obtained in advance on application to the Secretary.

Council

The Council regret to have to record the death of Lieut.-Colonel Sir Arthur Leetham, Kt., K.C.V.O., C.M.G., F.S.A., a Vice-President of the Institution. Sir Arthur Leetham was Secretary of the Institution from 1904–1927; in 1910 he was also appointed Chief Executive Officer. After retiring, he continued to give his services as Hon. Curator until 1928.

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ROYAL NAVY.

*Admiral of the Fleet Sir Roger J. B. Keyes, Bart., G.C.B., K.C.V.O., C.M.G., D.S.O., D.C.L., LL.D.

REGULAR ARMY.

Major-General B. D. Fisher, C.B., C.M.G., D.S.O., A.D.C.
General Sir A. A. Montgomery-Massingberd, K.C.B., K.C.M.G.

MILITIA.

*Colonel The Lord Ampthill, G.C.S.I., G.C.I.E.

TERRITORIAL ARMY.

*Colonel J. Josselyn, C.M.G., D.S.O., O.B.E., T.D.
*Brigadier-General The Earl of Lucan, K.B.E., C.B., T.D.

Of the above, those marked * have offered themselves for re-election. This leaves two vacancies for the Regular Army.

Brigadier E. K. Squires, D.S.O., M.C., and Major-General C. J. C. Grant, C.B., D.S.O., have been nominated to fill these vacancies.

EX-OFFICIO MEMBERS.

Admiral Sir A. E. M. Chatfield, K.C.B., K.C.M.G., C.V.O., has succeeded Admiral Sir F. L. Field, K.C.B., K.C.M.G., on taking up the appointment of First Sea Lord; and Vice-Admiral L. G. Preston, C.B., has succeeded Air Marshal Sir Robert Brooke-Popham, K.C.B., C.M.G., D.S.O., A.F.C., on taking up the appointment of Commandant of the Imperial Defence College.

New Members

The following officers joined the Institution during the months of November, December and January:—

ROYAL NAVY.

Admiral Sir A. Ernle M. Chatfield, K.C.B., K.C.M.G., C.V.O.
Lieutenant-Commander H. M. C. Ionides, R.N.
Lieutenant I. H. Riches, R.M.
Lieutenant-Commander T. Nesbitt, R.N.R.
Lieutenant-Commander S. H. Paton, R.N.
Lieutenant C. E. Madden, R.N.
Lieutenant T. H. B. Shaw, R.N.
Lieutenant D. L. C. Craig, R.N.
Lieutenant R. C. Medley, R.N.
A. B. C. Gibson, late Sub-Lieutenant, R.N.
Commander M. Farquhar, R.N.
Lieutenant A. R. Kennedy, R.N.
Lieutenant-Commander K. Mackintosh, R.N.
Lieutenant H. W. Biggs, R.N.
Captain R. F. V. P. FitzGerald, R.N.
Lieutenant-Commander W. R. Bull, D.S.M., R.N.
Lieutenant-Commander V. H. R. James, R.N.
Lieutenant-Commander L. E. Porter, R.N.
Captain J. A. Edgell, O.B.E., R.N.
Captain T. B. Drew, O.B.E., R.N.
Commodore G. Layton, D.S.O., R.N.
Lieutenant-Commander I. M. R. Campbell, R.N.
Commander W. G. Andrewes, R.N.
Commander M. J. Shaw, M.B.E., R.N.
Paymaster Lieutenant-Commander T. E. Nave. R.N.
Lieutenant D. A. H. Hornell, R.N.
Lieutenant (E) N. E. H. Clarke, R.N.
Lieutenant T. Emanuel, R.N.
Lieutenant P. C. L. Yorke, R.N.
Midshipman D. C. Cunningham, R.N.
Captain W. H. Gell, D.S.O., R.N.
Lieutenant M. C. W. P. Consett, R.N.
Sub-Lieutenant H. R. Law, R.N.
Captain W. G. Tennant, M.V.O., R.N.
Instructor Lieutenant E. F. Byng, R.N.
Captain Sir Ion Hamilton Benn, C.B., D.S.O., T.D., R.N.V.R.

ARMY.

Captain R. E. Urquhart, The Highland Light Infantry.
Lieutenant J. G. Clarke, 4/7th Dragoon Guards.
Lieutenant R. V. Dewar-Durie, The Argyll & Sutherland Highlanders.
Major R. W. MacLeod, R.A.
Captain M. F. T. Baines, R.A.
Captain K. H. Wallis, R.A.
Lieutenant-Colonel H. C. B. Wemyss, D.S.O., M.C., Royal Signals.
Lieutenant-Colonel N. C. Bennett, O.B.E., M.C., The Argyll & Sutherland Highlanders.

Captain W. H. Ray, R.E.
Captain N. L. C. Irwin, 2/8th Gurkha Rifles.
Lieutenant G. B. R. Stephens, 2/7th Gurkha Rifles.
Lieutenant C. F. Capper, R.A.
Lieutenant G. H. Hunt, The Rifle Brigade.
Lieutenant R. B. Pembroke, Coldstream Guards.
Major B. Cuff, The Cheshire Regiment.
Lieutenant F. C. Tracey, The York & Lancaster Regiment.
Colonel FitzG. G. FitzGerald, D.S.O., late R.A.M.C.
Major A. F. Simson, late R.M. Artillery.
Captain W. P. H. Gorringe, 3/15th Punjab Regiment.
Lieutenant J. M. K. Spurling, The Leicestershire Regiment.
Lieutenant H. C. B. Hall, R.A.
Captain J. V. Hughes-Hallett, The Seaforth Highlanders.
Lieutenant M. W. Hope, R.A.
Captain I. M. Pelham Burn, R.A.
Captain G. P. Crampton, M.C., 9th Gurkha Rifles.
Major G. C. Campbell, The Argyll & Sutherland Highlanders.
Lieutenant-Colonel W. A. Sparrow, O.B.E., T.D., R.E. (T.A.) Reserve.
Lieutenant E. L. L. Vulliamy, Royal Signals.
Captain E. N. Crosse, M.C., R.A.
Lieutenant F. C. Scott, R.H.A.
Major-General A. W. Bartholomew, C.M.G., C.B.E., D.S.O., late R.A.
Captain W. H. C. Rainier, 4/13th Frontier Force Rifles.
Lieutenant J. Y. Whitfield, The Queen's Royal Regiment.
Captain R. H. Sayer, D.C.M., R.A.P.C.
Lieutenant M. E. Few, Royal Sussex Regiment (T.A.).
Lieutenant G. Peddie, R.A.
Lieutenant C. G. Moore, Royal Signals.
Captain A. F. A. Howe, attached R.A.M.C.
Lieutenant G. E. Bench, K.S.L.I.
Captain J. W. Carr, M.C., late 24th London Regiment.
Lieutenant-Colonel K. Sykes, M.C., T.D., Duke of Wellington's Regiment (T.A.).
Captain H. G. P. Stubbs, 4/14th Punjab Regiment.
Major V. E. Purcell, R.E. (ret.).
Lieutenant S. G. Hudson, R.E.
Major G. L. Tyringham, Scots Guards.
Lieutenant E. L. Bols, The Devonshire Regiment.
Captain J. Y. E. Myrtle, K.O.S.B.
Lieutenant J. R. I. Platt, The Somerset Light Infantry.
Lieutenant L. F. Heard, R.E.
2nd Lieutenant A. K. Steel, The East Surrey Regiment.
Lieutenant F. R. I. Williams, The Royal Fusiliers.
Captain G. C. May, M.C., The Border Regiment.
Lieutenant B. J. D. Gerrard, The Gordon Highlanders.
Lieutenant F. G. Anderson, 1/15th Punjab Regiment.
Lieutenant R. K. Exham, The Duke of Wellington's Regiment.
Lieutenant R. J. Bewell, The Gloucestershire Regiment.
Captain J. A. Barlow, The West Yorkshire Regiment.
Lieutenant F. T. B. Johnson, The Loyal Regiment.
Lieutenant J. A. Kitson, 2nd K.E.O. Gurkha Rifles.

Captain H. J. Hayman-Joyce, The Border Regiment.
Lieutenant-Colonel R. W. Oldfield, D.S.O., O.B.E., M.C., R.A.
2nd Lieutenant P. D. Maud, The Somerset Light Infantry.
Lieutenant R. G. Turner, The Duke of Wellington's Regiment.
Lieutenant H. S. Flower, The Northumberland Fusiliers.
Colonel A. A. Gemmell, M.C., T.D., 10th Bn. The King's Regiment (Liverpool Scottish).
Lieutenant V. M. V. Tighe, The West Yorkshire Regiment.
Captain J. Emerson, 2/4th P.W.O. Gurkha Rifles.
Lieutenant C. R. Douglas Gray, Skinner's Horse.
Lieutenant H. L. Prentis, The Royal Scots Fusiliers.
Major F. W. Pfeil, M.C., R.A.
2nd Lieutenant A. M. J. Littledale, The Essex Regiment.
2nd Lieutenant C. E. H. P. Warner, Coldstream Guards.
2nd Lieutenant P. S. Sandilands, The Royal Scots Fusiliers.
2nd Lieutenant R. C. R. Price, The Royal Welch Fusiliers.
2nd Lieutenant P. A. S. Robertson, Grenadier Guards.
Captain R. Clayton, R.E.
Major J. S. Heaton-Ellis, R.A.
2nd Lieutenant A. W. F. Peal, The Middlesex Regiment.
Lieutenant C. L. D. Dugmore, The East Yorkshire Regiment.
Lieutenant H. Murray, The Cameronians.
2nd Lieutenant D. C. Cameron, R.E.
Captain Sir Henry R. K. Floyd, 15th The King's Royal Hussars (R. of E.).
Lieutenant D. R. Skinner, Royal Tank Corps.
Lieutenant J. De C. Hanafin, 5th Bn. (D.C.O.) 11th Sikh Regiment.
Lieutenant J. A. L. Pritchard, The Cheshire Regiment.

THE ROYAL AIR FORCE.

Flight Lieutenant C. W. Rugg, R.A.F.
Squadron Leader S. D. Culley, D.S.O., R.A.F.
Flying Officer E. A. McGowan, R.C.A.F.
Flying Officer G. R. A. Elsmie, R.A.F.
Flight Lieutenant E. L. S. Ward, R.A.F.
Group Captain P. Babington, M.C., A.F.C., R.A.F.
Flying Officer I. B. Newbigging, R.A.F.
Flight Lieutenant J. L. Wingate, R.A.F.
Flight Lieutenant G. V. Howard, D.F.C., R.A.F.
Flight Lieutenant G. Harcourt-Smith, R.A.F.

New Conditions of Membership

With the current year the new permanent conditions of membership come into force. The Entrance Fee, which was originally £2 2s. and, as a temporary measure, was suspended during 1932, is now £1 1s. The Annual Subscription remains £1 5s.

The Life Subscription is £20, or may be paid in four consecutive instalments of £5 5s.

Special Facilities for Junior Officers

The attention of Members is invited to the special facilities which now exist for Junior Officers to join the Institution :—

Commissioned Officers of the Home, Dominion, Indian and Colonial fighting Services and their Reserves, of three years or less seniority as such ; Midshipmen, R.N., R.N.R. and R.N.V.R. ; and Naval, Military and Air Force Cadets, are admitted to Membership without Entrance Fee on payment of the first annual subscription of £1 5s.

Gold Medal Essay, 1932

The following essays have been received :—

" Gang Warily."
" Kommt Zeit, kommt Rat."
" Mobility."

Results of the Competition

The following is the result of the competition for the Gold Medal of the Royal United Service Institution and the Trench Gascoigne Prize :—

Gold Medal and 1st Trench Gascoigne Prize :—

Wing-Commander : J. O. ANDREWS, D.S.O., M.C., R.A.F.

Second Trench Gascoigne Prize :—

Flight-Lieutenant : F. A. SKOULDING, R.A.F.

Gold Medal Essay Subject (Military), 1933

The following is the subject which has been selected :—

" Assuming that it may be necessary in war to employ part or all of the Territorial Army overseas so as to produce within the shortest time a field army fully trained and equipped, and organized to include the necessary non-divisional troops ; are any changes required in the present peace-time organization, training and equipment of the Territorial Army to meet these requirements."

Lecture Postponed

The lecture on " Recent Operations in Kurdistan," which was to have been given by Group Captain A. G. R. Garrod, O.B.E., M.C., D.F.C., R.A.F., on Wednesday, 8th February, has been postponed until Wednesday, 8th March.

Office to Let

A small but convenient office on the top floor of the Institution is available, and would be let to a suitable tenant. Application should be made to the Secretary.

JOURNAL

Back Numbers Required

Owing to the unprecedented demand for 1932 Journals, stocks have become exhausted. Members who have finished with their copies are invited to return them. If desired postage will be repaid.

Notes for Guidance of Contributors

The Editor has been asked to publish some notes for the guidance of those who desire to offer contributions to the JOURNAL. The following are the principal points to which attention is invited :—

(1) Preference will be given to articles which assist in the " promotion and advancement of naval and military science and literature " in practical form, and which are written with an up-to-date and first-hand knowledge of the subject with which they deal. Articles relating to the Royal Air Force and to Service aviation are included under this heading.

(2) Historical articles should point some definite lesson for the present or future and not merely recapitulate accounts of episodes of the past.

(3) Articles of interest to students of war in all three Services are preferable to those of a highly technical nature or of such restricted interest that they could only appeal to a very limited number of our readers.

(4) As a general rule articles should not exceed 3,000 words in length. Apart from considerations of space, experience shows that the short article which makes its points concisely is more effective and more widely read than one of a long and rambling character.

(5) Contributions intended for the JOURNAL should be addressed to the Editor. They should be typed (double spacing), but short articles in legible manuscript can be accepted if a typewriter is not available.

(6) The Editor is authorized to obtain official sanction for the publication of articles written by serving officers; it must be clearly understood that nothing written by such officers can be accepted for the JOURNAL without this sanction being obtained.

(7) Except where contributors are good enough to offer articles without remuneration, this will be paid at the authorized rates.

(8) Attention is invited to the note on the first page of each JOURNAL regarding authors alone being responsible for their opinions; also to the notice at the head of " Correspondence."

Copies of Frontispiece

A limited number of copies of the coloured Frontispieces, published in recent numbers of the JOURNAL, are available for sale and can be supplied, post free, for 6d. each.

Additional Copies of the Journal

Additional copies of early numbers of the JOURNAL, if available, can be supplied, post free, to Members at :—

3s. for JOURNALS prior to February, 1927.
4s. for the JOURNAL of February, 1927, and later.

LIBRARY

Rules Governing Return of Books

The attention of Members is invited to the following Regulations governing the retention and return of books :—

(1) Certain books, for which there is a special demand, must not be retained longer than a fortnight after the date of receipt. A notice to this effect will be found in the book.

(2) In the United Kingdom.—Books must normally be returned within one month of the date of issue; but the Librarian is authorised to make extensions of one month at a time on application by a Member, up to a maximum of three months from the date of issue, if the work is not required by another Member.

(3) Stations Abroad.—When books are sent to Members abroad the same rules apply as for the United Kingdom, except that "the date of receipt" is substituted for "the date of issue."

N.B.—IN VIEW OF THE INCREASING DEMAND FOR BOOKS FROM THE LENDING LIBRARY, IT IS ESSENTIAL IN THEIR OWN INTERESTS THAT MEMBERS SHOULD ADHERE STRICTLY TO THE RULES GOVERNING THE RETURN OF BOOKS. FAILURE TO DO SO IS CAUSING MUCH INCONVENIENCE, AND INVOLVING THE INSTITUTION IN UNNECESSARY EXPENSE AND CLERICAL LABOUR.

MUSEUM

Special Exhibition

A Special Exhibition of dioramas illustrating "Empire Voyages and Discoveries" has been arranged. Six large dioramas show historical episodes connected with the founding of the Empire overseas; and there are a number of smaller ones depicting some of the principal places in the Dominions.

Collection of Medals

The Institution already possesses a large and varied collection of medals, but offers of additions to the collection will be most welcome. Details of such offers should, however, be communicated to the Curator before medals are sent.

Regimental Badges and Buttons

The Institution's collection of Regimental Badges and Buttons has been reorganized and re-arranged. It is desired to complete the collection, and contributions from Members for this purpose would be very much appreciated. The Institution also has a certain number of spare badges which could be exchanged for others or sold to collectors.

Additions

Permanent.

(8543) Collection of medals.—Bequeathed by Mrs. F. Rentzsch.

(8544) Two Arab swords.—Presented by Mrs. G. Thesiger.

(8545) Watch and chain worn by Captain J. Elliott, R.N., when he was a Midshipman on board H.M.S. "Resolution" during Captain Cook's voyage round the world, 1772–1775.

(8546) Collection of gorgets.—Presented by Mrs. Ashmore.

(8547) Electric-light holder from U-boat "131."—Presented by Commander J. W. Damer-Powell.

(8548) Sword of General Sir Alfred Gaselee.—Presented by Lady Gaselee.

(8549) Officer's cap badge, 1/11th Sikh Regiment.—Presented by Captain J. A. Maclaran.

(8550) Model of a Hawker "Hart" two-seater aeroplane.—Presented by the H.G. Hawker Engineering Co.

(8551) Relief portrait of the Duke of Wellington.
Tokens commemorating Wellington's victories.—Presented by Her Majesty Queen Mary.

(8552) Model of a Bristol "Bulldog" single-seater fighter aeroplane.—Presented by the Bristol Aeroplane Co.

(8553) Busby badge and plume, Royal Horse Artillery, and busby badge of the Bombay Artillery.—Presented by P. A. Glyn, Esq.

(8554) Engravings of the Earl of Northesk and Earl St. Vincent.—Presented by Miss A. Worthington.

(8555) Collection of medals.—Presented by Captain C. Newnham-Slaney.

(8556-8557) Collection of uniforms and badges.—Presented by Major N. H. C. Dickinson.

(8558) Medal ribbons and shoulder-straps from a military frock coat worn by Field Marshal the Earl of Ypres.—Presented by the Earl of Ypres.

(8559-8562) Collection of military head-dresses and swords.—Presented by General Dimitri D'Osnobichine.

(8563) Helmet of the Clare Militia.—Presented by W. H. A. Macdonnell.

(8564) Midshipman's full dress coat, 1864.—Presented by Commander E. A. Ommaney, R.N.

(8566) Helmet and cap badge of the Cambridge University Volunteer Corps—Presented by Major W. N. Wilkin.

(8567) Print of the Relief of Lucknow and photograph of Misr Kanangi who accompanied Mr. Kavanagh through the rebel lines at Lucknow.—Presented by Major H. R. Kavanagh, M.B.E.

Attendance

The amount taken for admission during the past quarter was :—

£102 13s. 0d. in November.
£88 7s. 6d. in December.
£105 5s. 0d. in January.

Purchase Fund

This Fund has been opened to assist in the purchase of new exhibits. The Council hope it will receive the support of Members interested in the Museum.

REGIMENTAL MUSEUM NOTICE

A Regimental Museum is being formed at the Depot of the Lancashire Fusiliers, at Bury, and gifts of war souvenirs, articles of uniform, medals, etc., associated with the Regiment will be welcome. All communications should be addressed to the officer commanding the Regimental Depot.

HIS MAJESTY KING GEORGE V.

FROM THE PORTRAIT BY SIR ARTHUR COPE, K.C.V.O., R.A.
SPECIALLY PAINTED TO COMMEMORATE
THE CENTENARY OF THE ROYAL UNITED SERVICE INSTITUTION

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[Authors alone are responsible for the contents of their respective Papers. All communications (except those for perusal by the Editor only) should be addressed to the Secretary, Royal United Service Institution.]

THE AUXILIARY PATROL IN WAR

By CAPTAIN H. S. LECKY, C.B., A.M., R.N.

On Wednesday, 16th November, 1932, at 3 p.m.

ADMIRAL SIR R. G. O. TUPPER, G.B.E., K.C.B., C.V.O., in the Chair.

THE CHAIRMAN, in introducing the Lecturer, said that he was a very worthy and distinguished son of a very worthy and distinguished father.

LECTURE.

TO give an adequate description of the Auxiliary Patrol Service, and especially of its work in the late War, would take half a dozen lectures; even then much of interest would have to be omitted from the record of its operations, because there were many which must still be regarded as secret. I am, therefore, going to confine my remarks chiefly to the formation of the Patrol and an account of how it was manned and maintained. The events I shall have to refer to are some seventeen or eighteen years distant from to-day and, being retired, I have no access to official papers, so must ask your kind indulgence if I only give a bird's-eye and memorised view of the service in a very general way.

HISTORICAL PRECEDENTS.

I have noticed with surprise that, since the War ended, there has been a tendency to speak of the Auxiliary Patrol, or the Yacht Patrol as it was originally called, as though such a subsidiary service was an unprecedented event in naval annals. This is by no means the case.

Although the centrally organized form of this service in the late War differed from the attempts and accomplishments of previous reigns, the principle of giving assistance to the main fleets by the use of small vessels, capable of carrying some of the offensive weapons of their time, is at least four centuries old.

When the Spanish Armada called on us in 1588, many small craft took the sea, locally and not centrally organized, and did their best to assist the Queen's ships in the defence of these Islands. The City of London fitted out thirty vessels, the Queen privately paid for the equipment of some, so did the coast towns, and others joined voluntarily when the Armada appeared, I presume at the expense of the owners. Altogether there was a fleet of 140 ships contributed from these various sources. It is of interest to recall that we deciphered the Spanish plans at Nailsea Court in Somerset, the present owner of which place—Lieutenant-Commander C. E. Evans, R.N.V.R.—although approaching sixty years of age, served throughout the War in the Auxiliary Patrol. The Spaniards were five years getting ready, and the Duke of Medina Sidonia not only professed absolute inexperience of war and sea, but admitted a desperate liability to sea sickness. Perhaps that is the real reason why Drake was in no hurry to finish his bowls on Plymouth Hoe! At any rate we had ample time to get ready, and this is one of the first recorded instances I can find of small coastal craft being deliberately employed to supplement the work of the genuine men-of-war.

Right through the succeeding wars down to the end of the Napoleonic struggles, small vessels, not centrally organized, were taken up, manned and armed by local authorities, and put on to duties suitable to their abilities. They protected the coastwise trade, carried despatches, searched for flagships at their rendezvous and so on.

Steels' Navy List of 1794 shows that there were 21 such vessels, working in close—but sometimes quarrelsome—association with the Excise, Revenue, and Impress vessels. In 1798 there were 93 ships, schooners, luggers and cutters; in 1805 there were 139; the influence of Trafalgar reduced the number to 60 in 1810 and 49 in 1814; in 1815 their names disappear from the Navy Lists. Nelson served in one in the West Indies—the "Lucy"—which, after an eight hours' chase, captured the French schooner "Abigail."

These small craft went under the general title of "Hired and Armed vessels," and this somewhat clumsy title exactly defines the status of most of the vessels comprising the Auxiliary Patrol in the late War.

As the service in its modern form began with yachts, the title of "Yacht Patrol" was first used. But after two and a half years of war, I found that out of 3,000 mixed types we only had a hundred yachts,

and, therefore, submitted a change of title to that of "Auxiliary Patrol," which the Board of Admiralty approved.

The possibility of using the old term "Hired and Armed" was considered, but it was not found easy to fit it into anything as short and convenient and descriptive as Auxiliary Patrol.

PRE-WAR SITUATION.

In spite of historical precedent, it does not appear to have been foreseen before the outbreak of the late War that an Auxiliary Patrol would be required for work round our coasts. If it was foreseen, the scale on which such a service would have to be developed was certainly not anticipated, nor did any sort of organization or skeleton scheme exist. There were no plans for taking up vessels, no provision for armaments, stores or supplies, no indication whence the personnel was to be provided, and no operational areas laid down. If I am wrong and these requirements had been foreseen, then political or financial necessities may have prevented any development of them. It is true that there was an Admiral of Patrols—I had served on the staff of his predecessor—but he only commanded the older destroyers and some torpedo boats, and I believe he was supposed to have some sort of general control of our coastal submarines.

There was an organization for taking up a limited number of trawlers for minesweeping purposes. The rates of hire were settled and a trawler section of the Royal Naval Reserve was established, which allowed for a personnel capable of expansion. This scheme owed its success very largely to the efforts of the late Captain T. P. Bonham, the Inspecting Captain of Minesweepers, who lost his life while commanding H.M.S. "Black Prince" at the battle of Jutland. But the pre-War arrangements referred solely to unarmed vessels for minesweeping duties. I presume that it was intended to provide some sort of protection for them in their work by the Admiral of Patrol's coastal torpedo craft and by the small obsolete gunboats, also fitted for minesweeping but which retained their 4.7-in. guns.

The minesweeping service began as an entirely separate organization from the Auxiliary Patrol. There was an Admiral of Minesweeping, a Captain of Minesweeping at sea, and an Inspecting Captain at the Admiralty. At the outbreak of war it was worked up and expanded into a most gallant and hard-working service with, unfortunately, a high mortality ratio. At a later date all the minesweeping trawlers outside the area St. Abbs Head and the S. Goodwins, other than those at the Nore and Harwich, were absorbed into the Auxiliary Patrol organization, as it was reported their local employment was sometimes irregular when

there was no sweeping to be done. This enabled them to be used for patrol duties, but they were held available for sweeping when required. As the removal of fishing craft from their normal business had a prejudicial effect on the fish food supply, it was essential to extract the fullest possible military use from all those under Admiralty charter.

There was also in existence an organization known as The Royal Naval Motor Boat Reserve. Admiralty Committees had met before the War and decided the outlines on which this little service was to be formed. Its origin was mainly due to the foresight and efforts of, amongst others, Dr. Morton Smart, a surgeon specialist who subsequently became a Commander R.N.V.R., and who served with distinction in the Belgian Canals, Dardanelles and West Indies. This service was also quite separate from the Auxiliary Patrol; it was abolished in 1915 and will be referred to later.

WAR NECESSITIES.

Although the possibility of extensive mining operations by any potential enemy had been foreseen and met by the pre-War minesweeping organization, the submarine was not believed to have reached a stage of advancement which would admit of anything more than a restricted offensive. But various events—the loss of the "Pathfinder" off the Firth of Forth, the ramming of "U.15" North of the Orkneys by the "Birmingham," the loss of the cruisers "Hawke," "Hogue," "Aboukir," and "Cressy," and of the battleship "Formidable"—demonstrated latent and unsuspected operational capacity in this new weapon. This resulted in the withdrawal from coastal work of many destroyers which became linked up with the protection and anti-submarine operations of the battle and battle cruiser fleets, thus leaving a still heavier strain to be borne by those left to do that work.

The old 'blue water' method of closely blockading the enemy into his ports was impossible, and this old-fashioned but automatic form of protecting trade and coastal areas could not be relied upon. The necessity for something to act against small enemy craft, to afford the necessary coastwise protection, to protect minesweepers, and to do the thousand and one tasks which war creates, led to the urgent call for a Coastal Patrol, offensive in character, in addition to the defensive role of minesweeping.

So the Marquis of Ormonde and the Duke of Leeds—Commodore and Vice-Commodore respectively of the Royal Yacht Squadron—were called to the Admiralty and asked if any of the steam yachts were capable of mounting guns. Ways and means were discovered of commissioning a few small yachts, and some trawlers were given a 3 pdr. This small

nucleus of what was to become a huge fleet of small craft was sent to sea for trial and report.

THE MAKING OF THE AUXILIARY PATROL.

Such was the state of affairs in October, 1914, when I became connected with this new service. Since 5th August I had been in charge of a group of six minesweeping trawlers at Harwich. We had been sent out immediately, unarmed and without wireless, to sweep for the "Königin Luise" minefield, and subsequently used to leave harbour at 2 a.m. to sweep the channels which might, later on in the day, be used by Commodore Tyrwhitt's light cruisers and destroyers.

One forenoon I was hailed from a light vessel, and informed that I was to return to Harwich immediately. I became apprehensive that one of the Harwich light cruisers had struck a mine in a channel which I had just declared safe, and was relieved to find that such was not the case, and that I was merely ordered to report to the Admiralty at once. I was given the outline of the scheme so far on trial and told to develop it. I believe I was selected because I had served on the staffs as Gunnery Lieutenant of both the Admiral Commanding Reserves and the first Admiral of Patrols.

In reply to my enquiry as to what kind of ships I was to take up and where from, I was told to "take up anything seaworthy that has not got a hole in its bottom!" Enquiries as to naval personnel for guns, and R.N.R. ratings to complete their crews were met, not with discouragement, but with point blank refusals from both the Director of Mobilization and the Admiral Commanding the Reserves. These eminent officers held themselves responsible only for manning the main fleet and certain subsidiaries. On enquiring for R.N.V.R. ratings, who I had always believed were, under their Act of Parliament, intended to supplement the work of the Navy in all theatres of maritime effort, I was informed that the First Lord had turned them into soldiers to serve on shore in Flanders, that a large number were already interned in Holland, and that the rest were being recruited for military service elsewhere.

Upon reporting to my superiors that neither R.N., R.N.R. or R.N.V.R. ratings were available, and enquiring what it was suggested should be done and whether I had authority to recruit—which was what I much wanted to do—I was told to get a personnel "from under the lamp-posts." On these two instructions, "to take up anything seaworthy that has not got a hole in its bottom" and to recruit "from under the lamp-posts," the Auxiliary Patrol was formed.

It was decided to start with yachts, trawlers, and similar vessels suitable for arming, and with drifters to work with nets—both entangling and mined. I propose to deal with each class of vessel in turn.

Yachts

The Secretary of one of the Yacht Clubs spent a week or two at the Admiralty with lists of yachts; but good reasons disclosing themselves for a discontinuance of the arrangement (he was a broker and also an agent), he gave it up and worked independently. Most of the few very small yachts on trial had been taken up, on the advice of this same Secretary, on Charter terms in which the owner gave the yacht practically free (1/- a month) for the first three months, and then received £1 per Thames Measurement ton per month. Thames measurement tonnage is arrived at by the arbitrary formula :—(L—B) x B x ½B÷94. It has no direct relation to the actual displacement tonnage, even the length is not the true length, varying as it does with the inclination of the stern post. It takes no account of draught, nor were such material factors as age, speed, suitability or seaworthiness allowed for in rentals. The rate of hire in some cases would have returned to the owner the entire value of the vessel in fifteen or eighteen months, and what was more ludicrous, a modern steel 16-knot twin-screw vessel of high freeboard received exactly the same rental as a forty year old 6-knot vessel of the same length and beam under the formula.

The first necessity was to put this matter on a more business-like footing, and an arrangement was worked out whereby 10 per cent. of the agreed value of the yacht was to be paid as rental. Hundreds of thousands of pounds per annum were saved under this arrangement. The owner was relieved of all overhead charges for insurance, maintenance, repairs, wages, etc. The agreed value of the yacht was paid if she was lost. The Admiralty paid the costs of reconditioning the vessel at the end of her service. The owner was informed he had the right of appeal to the Shipping Arbitration Board as to the proposed "agreed value" or "reconditioning," and only once—a reconditioning case after the War—was the appeal exercised. In this £88,000 was claimed and £37,000 awarded.

From now onwards, all yachts were taken up on the new basis, and the owners of the original yachts were approached to convert voluntarily their charters to the new form, with the concession that they could have six months on the old rate. Most of them patriotically, and a few unwillingly, agreed to the release of the State from an arrangement which may have been based on the idea of a short war. Lloyds Register was used for selecting the additional yachts, and the method employed

in the first instance was to invite the owner to lend his vessel for the duration of the war under the new chartering arrangements.

A yacht is a very personal possession—much more so than a horse. As an example, take the Duke of Bedford's 1,421 ton "Sapphire." The specially designed plate in this vessel's dining saloon alone cost £3,000. Since the War she has twice changed hands (after the Admiralty had "ruined" her of course) at, I am told, £140,000 and £110,000 respectively; originally, she cost £80,000. We were able to mount a 4-in. gun[1] in her as well as a 12 pdr. and provide her with a 1½ k.w. wireless set and depth charges.

The State had the power to requisition, but it speaks well for the yacht-owner that in only one case did this power have to be used. In this instance fifteen to twenty authorities were directed to arrest the yacht if she came within their area. She was soon caught, did good service, and was subsequently lost.

Under the new arrangement all the biggest and best of the British yachts were taken up. There being at that time no foreign auxiliary patrols, the opportunity was taken at an early stage to approach French, Russian, and American owners, and a considerable addition of suitable vessels was made from these sources. One American owner would not hire, but offered to sell his vessel for £350 per Thames Measurement ton. As the average value of all British yachts taken up was £32 per T.M. ton the offer was declined, but he subsequently sold the ship to the Russians for between £400 and £450 a T.M. ton, the purchase price being provided by Russia out of a loan from our Treasury! Notwithstanding the undoubted right of a belligerent to do so, the Foreign Office unfortunately thought it politic to refuse us permission to seize several large and very suitable foreign yachts lying in our waters for safety, and whose owners had declined to charter to us.

By these means the total number of yachts taken up soon approached a hundred, those left out being either unsuitable or employed as hospital ships, etc. The owner's assent having been given, the yacht was examined by our standing survey party, reported on, and an agreed value negotiated with the owner. She was brought to a naval dockyard—in nearly every case Portsmouth, and fitted out. There she was painted grey, valuable furniture and fittings were replaced by naval part-worn substitutes, 4-in.- 12- 6- or 3-pdr. guns mounted, decks strengthened under gun mounting positions, wireless fitted, magazines and shell rooms

[1] This 4-in. gun would have enabled her to outrange all the 27 and 30 knot destroyers (73), the "River" class (33) and the early "Tribals" armed with 12 pdrs. (6); total 112. Though not so fast, she could keep the sea much better than and was a superior gun platform to any of these destroyers.

provided, bulkheading for living spaces arranged for, shelters erected on bridges to give protection during long hours and winter work at sea for which the yachts had not hitherto been used, signalling arrangements made, and confidential books and stores supplied.

There is very little that is delicate about the best yachts, except their appearance. Most of them are beautifully constructed to Lloyds class, have good sea-keeping speed, are fine sea boats and are excellent examples of naval architecture. The great firm of G. L. Watson & Co. was responsible for the design of most of the best of them.[1] All this conversion work was effectively carried out at Portsmouth, where we had the great benefit of the advice and assistance of the Flag Captain, now Vice-Admiral, R. G. Stapleton Cotton.

As soon as the yachts were completed, they were despatched to their various bases and began duty at once. They carried their guns well above the water, were comfortable to live in, and afforded moral as well as material support, not only to the smaller types with which they worked, but to the more nervous-minded of the populace in their neighbourhood.

When the Dardanelles operations were starting, we hastily bought by cable—I think for £40,000—the twin-screw 1,400 T.M. ton yacht "Triad" for the use of the Admiral. That she was a good purchase is shown by the fact that to-day, eighteen years afterwards, she is still in the Navy as the S.N.O.'s ship in the Persian Gulf.

When it came to the question of manning these yachts it was suggested, at first, by certain very patriotic owners that they should command their own yachts, and a few were granted temporary commissions as R.N.R. officers to do so. The scheme was open to many obvious objections, and the subsequent advice of the Law Officers of the Crown, that no defence would avail a ship in accident commanded by an unqualified captain, resulted in the Board of Admiralty ordering the withdrawal of uncertificated owners to bases, etc., where they did most useful and laborious work on the staffs of officers commanding areas. Fifty tons became the limit for an uncertificated person to command. Even before this, the removal of uncertificated yacht navigators and mates had been taken in hand. Some of the yachts were put under the command of retired Flag Officers with temporary R.N.R. commissions, and others had regular R.N.R. officers, whom the Admiral Commanding Reserves reluctantly released. There were also a very few retired naval officers.

[1] Mr. J. R. Barnett of this firm was an invaluable adviser to us on all power-yacht matters.

The officers were made up of the yachts' original masters and mates, where suitable, or by properly certificated Merchant Service officers. As the Admiral Commanding Reserves was unwilling to supply any more R.N.R. officers after the first twenty-four, we interviewed and selected other Merchant Service officers in the Patrol office, receiving much assistance from such organizations as the Imperial Merchant Service Guild, Mercantile Marine Service Association, etc. The qualifications we laid down were that a First Mate's foreign-going certificate was required for entry as a temporary Sub-Lieutenant R.N.R., but for direct entry as a temporary Lieutenant R.N.R. a Master's foreign-going certificate and the command of a 3,000 ton ship for three years were the essential qualifications. We were looking for men with a disciplined mind but with a piratical outlook; but in special cases these requirements were varied. We also entered other kinds of officers. Training was given in the type of gun carried in the ships to which officers were sent. Sub-Lieutenants were promoted immediately for acts of gallantry and good work, and, subject to recommendation, automatically after twelve months. Special arrangements were also made to relieve Sub-Lieutenants for a few weeks when they became due for examination for higher certificates, so that their professional careers should not be prejudiced.

These arrangements applied to all temporary Reserve officers recruited for the Auxiliary Patrol and, beyond saying that the numbers reached a total of nearly 3,000, they need not be referred to again.

The crews were made up of suitable members of the original crew, supplemented by men of the fishing, yachting, and coastwise type, and there was no lack of these for the first two or three years of the War at any rate.

The owner's engineer had often been built in the ship and generally stayed with her. This always pleased the owner, who felt his machinery was being well looked after, and also enabled him from time to time, subject to censorship, to hear how his property was getting on.

The executive officers were paid at the rate of the commission which they held, but the engineers and crew were paid at what had been the owners' rates plus 15 per cent. war risk, plus naval victualling. As the owners' rates showed differences, standard rates were subsequently adopted.

Looking back, it is curious to note there was only one oil-engined yacht in service—the 400-ton " Pioneer," built by Camper and Nicholsons, and owned by Mr. Paris Singer. A future Patrol might possibly have only one yacht with a boiler room!

Trawlers

The steam trawlers were taken up at the principal fishing bases—Grimsby, Lowestoft, Fleetwood, Hull, Aberdeen, Milford Haven, etc.—under the same Charter arrangements that the Admiralty had settled before the War. As the price of fish rose and fish became more and more a necessity for feeding the population, the reluctance of the owners for their vessels to be taken for government service naturally did not diminish, and considerable judgment had to be exercised in selection so that all owners bore the strain as equally as possible. This could not always be done, but everyone did their best and, on the whole, the owners were very helpful.

These trawlers were fine strong seaworthy craft, varying in tonnage from about 100 to 300 tons, and in length from 90 ft. to 140 ft. They had good upstanding bows, a coal supply which enabled them to remain at sea three or four weeks at a time, and powerful single-screw engines for their main purpose of dragging a heavy trawl net over the ocean bed. Their draught was sometimes as much as 14 ft. aft, which gave them a good grip, but was a great disadvantage in minesweeping and led to the loss of many. It was this disability which led the Admiralty to build paddle and twin-screw minesweepers of much higher speed and less than half the draught. The trawlers' speed was not great—it averaged about 8 or 9 knots—but it corresponded with the submerged speed of the best of the German submarines. They had a big fish hold, capable of storing ammunition, extra coal, and anything that was required. They had good strong bows for ramming, and fine hefty sterns and propellers for kicking anything that came too near to them, and in every way they were strongly constructed.

We started with the idea that a yacht, six trawlers and four motor boats should form a unit, but this idea was soon dropped and the numbers of each type were adapted to the Areas in which they served. In any case the motor boats were not capable of keeping the sea with the other craft.

Minesweeping trawlers were unarmed. I have good cause to remember this for, when sweeping off Southwold, the War Signal Station semaphored " are you aware that the German battleship ' Schliesen ' is reported about fifteen miles to the N.E. of you ? " Patrol trawlers were armed with 12- 6- or 3-pdr. guns, and one in six was fitted with wireless, and equipped with one of the many explosive sweeps. As the War went on, they naturally became the repository of all sorts of experimental gear, such as hydrophones, howitzers, depth charges and depth charge throwers. At one period we were served out with a somewhat medieval weapon of war called a lance bomb. This consisted

of a strong stave, four or five feet long, with an explosive bomb at the end of it. The enemy having obliged by putting himself in a suitable position, the strongest man on board threw the weapon at the hull. Although much laughed at, the drifter " Gleaner of the Sea " did actually manage to disable " U.B. 13 " with it, when the submarine was then finally destroyed by other means.

As time went on we took up trawlers by the dozen at a time at the various fishing centres and fitted them out locally. Except for their deep draught aft, which increased the risk from mines, they made most excellent patrol vessels, as they could carry their guns high and remain at sea for weeks at a time in any sort of weather without suffering damage. The late Commodore G. P. Bevan set sail from Falmouth with a fleet of fifty very old trawlers and drifters, and arrived with them all intact at the Dardanelles about nineteen days later. Subsequently he personally, stayed at sea in various vessels of his command for a hundred and thirty continuous days without going into harbour.

We despatched these vessels to their allotted areas as fast as we could get them equipped by the contractors. Local firms were employed instead of the Royal Yards, not only in order to leave the latter free for work on naval types, but on the principle that as the former built and repaired such craft in peace they might well go on doing so in war-time. Here, too, the vessels were docked and machinery was repaired under Admiralty overseers. The guns and equipment were sent by rail, also detail drawings showing what was required in the way of strengthening under gun mountings, and for fitting offensive paraphernalia such as explosive sweeps, depth charges and so on. Wireless apparatus was fitted concurrently by the Marconi Company, who did most admirably. They were merely supplied with lists containing the name and location of the vessels to be equipped and left to do what was necessary. We received much assistance in the matter of wireless from Captain A. U. Moore, R.N., of the D.N.O's department at the Admiralty.

In the earliest days we made the mistake of supplying the best Welsh naval smokeless coal, but soon altered it when we found that trawlers got on better with, and that their boilers were more adapted to, the higher volatile and much cheaper grades which would have driven a naval engineer to suicide.

It is interesting to note how the trawler has left its mark on other types to this day. The Navy has built light cruisers with, or added to some existing cruisers, what is known as the trawler bow. The modern power yacht is often to be seen with upstanding bows instead of the low freeboard and deep wells only too frequently met with before the War. In fact, after the War, the late Duke of Leeds purchased a

large steam trawler and adapted her as a yacht which he named " Aries " in memory of his previous yacht of that name which, unfortunately, struck a mine and was lost with all hands in 1915. This trawler converted yacht of 300 tons T.M. can generally be seen in the season and, since the Duke's death, goes under the name of " Ocean Rover."

As the War went on the Admiralty, recognizing a national duty to replace the wastage of food-producing vessels, ordered some 458 trawlers to be built. There were three types, the designs of which were based on existing vessels.

Class	Gross Tons	Length O.A.	Length B.P.	Beam	Depth Moulded	I.H.P.	Cost	No.	
" Mersey " ..	326	148′	138′	23¾′	13½′	600	£20,000	112	
" Castle " ..	274	134′	125′	23½′	13½′	480	£18,000	197	Total
" Strath " ..	212	123′	115′	22′	13′	430	£16,000	149	458

The problem of naming such a number of little vessels was not easy, and the then Controller of the Navy was so good as to consult me, as no one wished to give them a combination of letters and numbers. I suggested that, as we had many ships named after past Admirals, we might go down to the lower deck and take a look round. I produced a copy of the ledger of the " Victory " on the day Trafalgar was fought and, as the suggestion was approved, trawlers were named after Nelson's seamen. So it came about that such names as John Cormack, William Harvey, Tom Cruize, Isaac Dobson, Samuel Green, etc., were once again at sea in the service of their country.

Drifters

The drifter is a much smaller type of vessel than the trawler. They range in size from about 40 to 80 tons, and in length from 70 to 90 ft., with a beam of 15 ft. and a draught of 7 to 8 ft. As their name implies, they are not intended to drag a heavy trawl, but to lay out light surface nets and, lying to their tow, just drift while the fish run into the net. They are, for their size, strong, buoyant, handy and seaworthy craft. They have single screws, and do not need such powerful engines as the trawlers. We took them up at the various herring drifter bases by the hundred. Their cost being much less than trawlers, they were often owned by single men, or by a family or by two families jointly, who would put their life savings into their purchase. The very personal nature of their ownership was indicated by such names as " Children's Provider," " Family Trust," " Three Friends," " Husband's Thrift," " Grandfather's Pride."

Although not originally intended to do so, a good many eventually carried guns when they became available. These vessels laid and watched specially made wire nets across the known routes of enemy submarines,

or in areas where they were expected to operate. Some of these nets were merely entangling nets, with indicator buoys on top to show which way the submarine was dragging them ; other nets were equipped with explosive mines. The drifters also carried depth charges, lance bombs and, later on, hydrophones. Like the trawlers, they were subjected to a veritable bombardment of experimental appliances which were sometimes successful. A few had wireless, and all did every conceivable warlike duty of which craft of their size and style were capable. Their suitability for the harder subsidiary work of fleets, such as towing targets, carrying stores, transporting bodies of men, has resulted in a number of them still appearing in the Navy List to-day.

The Admiralty eventually ordered some 226 steel and wooden drifters, and to assist in distinguishing them from the more homely named privately owned vessels, they were, on the suggestion of the present Vice-Admiral Lionel Preston, named after various aspects of the elements, such as :—" Milky Way," " Starlight," " Sunlight," " New Moon," " Iceblink," " Hoarfrost," etc. The principal details were as follows :—

Type	*Length O.A.*	*B.P.*	*Beam*	*Depth of hold*	*Gross Tons*	*I.H.P.*	*Cost*
Steel	95′	86′	18′ 10″	10′	95	270	£10,000
Wood	94′	86′	19′ 2″	10′	95	270	£8,500

Whalers.

An ingenious representative of the Smiths Dock and Shipbuilding Company of Middlesbro' called at the Admiralty one day with plans and a model. He secured an interview with the late Lord Fisher and persuaded him to order fifteen " whalers." These were vessels of 237 tons gross, 140 ft. long, 25 ft. beam, and with a draught of 6½ ft. Their armament was one 12 pdr. The engines of 1,000 h.p. gave a speed of 12 to 13 knots. They carried 60 tons of coal, and had a crew of 26. They were cut away aft, which made them handy under helm ; but they were not high enough in free board, their bridge was on the break of the forecastle and practically uninhabitable in bad weather at any speed, and the solitary gun was right forward where it could only be used in good weather. Almost their only good point was their light draught. One was lent to the French explorer Charcot to hunt submarines.

Patrol Paddlers.

In 1915 or early 1916, the Mediterranean command asked for some very light draught vessels of good size and speed for patrol work. I happened to be at Portsmouth when the telegram was handed me, and I foresaw difficulties in getting exactly what was wanted. As I looked

up from reading it, one of the Isle of Wight steamers passed on her way to Ryde. There was the very thing. Six of them—"Duchess of Richmond," "Duchess of York," "Duchess of Norfolk," "The Duke," "Princess Mary," and the "Queen"—were requisitioned at once, manned and armed and sent to Malta as patrol paddlers where they did good work. Portsmouth and the Isle of Wight were not very pleased about the reduced service at first, but I am glad to see those steamers now bear brass plates giving details of this honourable service, and to notice that the passengers read them with interest.

Soon afterwards we got four more of a similar type, but from a different source.

Personnel.

The officers for the trawlers, drifters and whalers, etc., were the experienced seafarers previously mentioned, recruited and entered as I have described by the Auxiliary Patrol Office. The aim was to provide a temporary Lieutenant R.N.R. for every six and a temporary Sub-Lieutenant R.N.R. for every three vessels. There were varying proportions for the drifters. Each of the whalers was commanded by a Lieutenant R.N.R. Some alterations and adjustments were made at the bases in order to suit special circumstances. All the other vessels were commanded by temporary Skippers R.N.R., who had Warrant Officer status. Lieutenant T. W. Moore, R.N.R., of the Imperial Merchant Service Guild gave us much assistance on this side of our manning problems.

The ratings were recruited either from the fishing industry, the Mercantile Marine, the coastwise trade, or from the seaboard generally. They were enlisted as temporary R.N.R. ratings—Trawler Section. Generally, special R.N.R. gunnery ratings were drafted; if none were available the crew was trained at the depots in the gun with which their vessel was armed.

None of the personnel had had any experience of naval discipline or customs, nor had they been instructed previously in offensive weapons of war; so in view of the fact that, in the press of circumstances, their training was necessarily very brief, it is impossible to speak too highly of their adaptability, their behaviour, their devotion to the interests of the State, and the results of their labours. Life in a muddy rat-ridden trench would seem like paradise to anyone who had to stick out two or three weeks of winter gales in the North Sea in one of these small patrol craft.

It is worthy of note that at no time did the Auxiliary Patrol include anything but a quite negligible percentage of R.N., pre-War R.N.R. or

pre-War R.N.V.R. officers and men. The two former were required for fleet service and the latter were mostly serving ashore as soldiers in the Naval Division. By far the greater proportion of both officers and men was specially recruited " from under the lamp-posts " as the instructions expressed it.

At the end of 1914 we had 635 such officers; a year later 1,393, and the number gradually mounted to about 3,000. By the end of 1916 there were roughly 52,000 ratings, and these numbers were never materially exceeded, though they sometimes expanded and then contracted again, as some other service was added *en bloc* to the Auxiliary Patrol organization, and then removed from it again. This happened in the case of the coastal motor boats, which were specially designed offensive craft of high speed, carrying torpedoes, and in no sense Auxiliary Patrol vessels. The proportions of personnel were, roughly, R.N. 4,000 (Pensioners, etc.); R.N.R. 42,000; R.N.V.R. 6,000. Total (say) 52,000.

Motor Launches.

I mentioned previously the pre-War existence of the nucleus of an organization known as the Royal Naval Motor Boat Reserve. After the outbreak of hostilities, this was soon increased to about 120 small and privately owned motor boats, ranging in tonnage from the 2-ton " Tortoise " and the 3-ton " Gabrielle " to the 69-ton " Perlona "; the average boat was about 20 tons. They were of different types and quality, and were generously placed at the disposal of the Admiralty by their owners who, in many cases, served in them with temporary R.N.V.R. commissions. The idea of owners commanding their own boats sounds attractive, but, in practice, it is unsatisfactory.

Few of these motor boats were large enough to mount a gun of any value against submarines and carry the necessary ammunition; and as most were not suitable for continuous sea work, it was found they had been relegated to harbour or inshore work of convenience but no great importance: work which, in many cases, could have been carried out by local watermen. By early 1915 this service had been increased by some 42 motor fishing drifters of an average size of say 50 tons. These were much better sea boats of course, but of low speed. None the less, Commander Morton Smart, R.N.V.R., was able to do good work with three or four smaller motor boats, both on the Belgian Canals and in the Dardanelles.

The total personnel was about 800. The administration in London consisted of an Admiral, a Rear-Admiral, six or seven other officers, a Secretary and a staff of clerks. This was thought to be unnecessarily extravagant, but it ran on for a time.

In the early part of 1915, Lord Fisher sent one of the very able Directors of a British armament firm to America to scour round generally and see what he could pick up or get built or manufactured quickly and which would be of assistance in the naval war. Among offers of a miscellaneous collection of ships, guns and munitions generally, a cable arrived reading something like this :—

> " Can get built quickly a number of wooden 19-knot twin-screw 75 ft. torpedo-carrying launches for patrolling."

This cable created some consternation. It was well known in the Navy that nothing of this type under 130 ft. length could be depended upon to keep the sea continuously. The Navy had experimented with 120 to 130 ft. Thornycroft and Yarrow torpedo boats for thirty years, and knew their limitations. Continuous sea-keeping ability is the keystone requirement of any auxiliary patrol vessel. Even the 130 ft. torpedo boats with higher forecastles than the 120 footers only kept the sea with extreme difficulty. Furthermore the then unreliability of the smaller diameter torpedoes, the immense care and skill required to keep this delicate weapon in any sort of efficiency, and the length of time required to train a personnel to use it, made it a most unsuitable weapon for the Auxiliary Patrol.

I was in the course of consulting various authorities as to the best way to get this proposal dropped and a better one substituted, when I found that Lord Fisher, without as far as I could ascertain consulting anyone in particular, had cabled back to America " build 50." This great man always moved very quickly ! These launches were thereupon laid down by the Electric Boat Co. of New York, and cost nearly £10,000 each. When the plans came over it was difficult to conceive what fighting value they would have. Everyone was convinced they were too short and of too low freeboard for continuous sea-keeping, and only after a struggle did we manage to obtain approval to cancel the torpedo and to give instructions to The American Bethlehem Company to build 13 pounder guns for them.

Several weeks later it became generally known that a second cable had gone directing a further 500 to be built, but 5 ft. longer. These were sub-contracted to Canadian Vickers and built on the River St. Lawrence.

Early in 1915 it had been decided to abolish the Royal Naval Motor Boat Reserve, to close their London Administration and, except for three or four special cases, to pay off all the boats and return them to their owners. The Auxiliary Patrol, which then stood at about 12,000 officers and men, was directed to take over the whole personnel, with

the customary Admiralty proviso that there was to be no increase of administrative staff!

Now, although the original motor boats were not considered worth keeping, the personnel was quite a different matter. It was, in fact, of much greater value than the vessels in which it had been serving, and included many yachtsmen of a high standard of seamanlike ability. There were men who had for years sailed their small craft round these tempestous Islands and even farther afield; men with considerable knowledge of tides, and coastal conditions, and possessing much nautical skill. It was obvious that they were the very people to man the American motor launches when they came over. Practical navigation and pilotage classes were started at the Royal Naval College, Greenwich. The cruiser "Hermione" was established at Southampton in place of the old yacht "Enchantress" which had been burnt, and seamanship, gunnery, signalling, and disciplinary instruction was given on board her. Two of the engines of one of the first motor launches to come over were hoisted out and set up on board the "Hermione" for teaching both officers and motor mechanics.

All this filled in the time while the M.L.s were being built, and an intensive recruiting campaign was started for officers, men, and motor mechanics, as the 550 M.L.s now to be manned would require 1,100 officers, 1,100 motor mechanics and nearly 3,000 ratings, plus reserves in each case. As they were recruited, these were passed through Greenwich and "Hermione" courses, and drafted as required. The motor launches were brought across the Atlantic six or eight at a time on the decks of transports, and we used the same methods for getting them to Patrol Areas abroad. Unfortunately, by this time, many of the best yachtsmen were in the Army all over the world and quite irrecoverable. I hope means will be found to prevent this happening in any future war.

When the first batch of M.L.s came over I went to Southampton and came round in No. 4 with Sir Ion Hamilton Benn to Westminster Bridge, where I took the Sea Lords down in a car to inspect her. The subsequent discussion encouraged me to make further efforts to have the building of the last 400 or 500 stopped immediately. It appeared that several million pounds were to be thrown away on a type which only met auxiliary patrol requirements in a limited way. At full speed these vessels used 43 galls. of petrol an hour, out of 2,050 galls. carried, and, although we increased this by adding a percentage of paraffin to the petrol, it will be seen that the sea endurance of the vessels ran only to days, where in trawlers and drifters it amounted to weeks. We sent one to sea under an Inspector of Lifeboats for trial under various

conditions, and received a careful report which lowered the temperature of every one who read it.

The support given by the Board of Admiralty led to a meeting of some fifteen or twenty people under the presidency of Mr. Balfour, who by then was First Lord. The Chief of Staff of the Grand Fleet —a very experienced torpedo officer—was down from Scapa and attended the meeting. The proposal was to stop building the last 400 80-footers and to substitute a 130-footer of an outline design submitted to the meeting. Curiously enough, the general idea of this design was similar in principle to the "Nelson" and "Rodney" of to-day; the bridge, machinery and gun being as far aft as possible, with the gun before the bridge. It was proposed to spend the same amount of money in America, but on say 200 or 250 of a bigger type, and to add to them as required. A long discussion disclosed that there was general agreement on the part of nearly everyone except Mr. Balfour and the contractor. The First Lord eventually decided that, although professionally and technically we might be right, the political effect abroad would be undesirable and would do much harm, and the matter must go forward as arranged. The loyal best then had to be made of the situation. At a later date thirty more of these craft were ordered to replace casualties, and at one period the French took two or three dozen off our hands.

Such is the story of how this country came to acquire 580 motor launches of 75 to 80 ft. length. When the Americans came to build craft of a similar type for themselves, they did not repeat our mistake; they made their launches some 40 ft. longer; but, even so, they could with advantage have made them longer still.

Each launch on arrival was overhauled by Dockyard officials. After one or two accidents all the petrol stoves had to be removed, bridge shelters had to be added, and various alterations and additions made which, I think, involved an increase of about £3,000 or more to the cost of each boat. Apart from all this, the exhausts were so noisy that they could be heard miles away on a still night, and gave ample warning to any enemy submarine.

When the supply of officers and ratings showed signs of diminishing in this country, a committee was formed under Commander F. P. Armstrong, R.N.V.R. of my office, and went round the world to Canada, Australia, New Zealand, etc., and the supply was maintained from these sources.

Thus were the M.L.s fitted out, officered and manned, and as fast as they were completed, they were despatched to the various Auxiliary

Patrol Areas at home and abroad to take up their duties with vessels already on service.

The courses at Greenwich and at Southampton proved of immense value to the yachting fraternity. It developed in them the old "Corinthian" spirit and greatly increased their skill and their confidence. Only a few weeks ago at Burnham an experienced and expert yachtsman told me that these courses, which at first he was annoyed at having to attend, had completely altered his outlook. Before the War, although he could handle his yacht well, he did not care to be afloat without a paid hand to help him in matters of tides, shoals and weather. "After the courses," he said, "I became quite confident of myself, and no longer required professional assistance of that sort. The paid hand, so often the nuisance of small yachts, is now no longer a necessity, and if I do have one for convenience, I am the master instead of being the servant." The Royal Corinthian Yacht Club was, I believe, founded in 1872 on the principle of a minimum of paid assistance, and the Club sees that that admirable principle persists to this day, many races being scheduled in which disqualification results if a professional touches the tiller.

The seamanlike abilities of the fisherman, the coastwise sailor and the better class longshoreman—who, after all, is often only a sailor with a family instead of a ship—had long been realised; but, until 1914, the yachtsman had no chance of proving his qualities. Then he did so most admirably, and can now be regarded as a real nautical asset in time of maritime emergency.

The spirit and comradeship of the R.N.V.R. officers who served afloat in the Auxiliary Patrol during the War is kept alive by a splendid Club in London, presided over by Commander Harry Vandervell, R.N.V.R., which meets once a month to dine and discuss matters of nautical interest. Their dinners have been attended by many Admirals of the Fleet, and all sorts of eminent and distinguished people interested in the sea. Indeed, one can apply to these yachtsmen and to the yachtsmen of the future the very true words of Captain Marryat, the naval novelist, who wrote that "the security of this kingdom is much increased by every man being more or less a sailor."

AREAS AND BASES.

The accompanying chart[1] shows the areas and bases into which the commands in Home waters were divided. At the outset Auxiliary Patrol vessels were attached to the main fleet bases, but the activity of the enemy submarines soon showed the necessity for dividing the waters

[1] See p. 32.

round these Islands into definite areas and populating them rapidly with a large number of small craft. The Mediterranean was also zoned, and there were outlying places such as Archangel, the Suez Canal, Trinidad, Canadian and African waters, where Patrol vessels were either sent or taken up locally. The principle followed was to make use of an existing depot if there was one already in the area, and if not to create one at once, either ashore or afloat according to conditions.

The bases and areas were, with one exception, commanded by retired Flag and other naval officers, many of whom had already served at sea in the Auxiliary Patrol, their places being taken by younger men or by suitable promotions. From the base the command of the area was exercised, and operations, stores, victualling, repairs, and maintenance managed. The greatest amount of decentralisation from the Admiralty was not only arranged for, but fought for. At the same time the vessels of any one or more bases were available for sweeps and combined operations ordered by the Admiralty.

An examination of the chart shows that the neighbourhood of salient points, such as headlands, navigational marks, etc., were, as far as possible, used as approximate or liquid divisions between areas. This was done because these points might be used by enemy submarines as landfalls at daybreak, and two sets of patrol vessels could be in the vicinity by arrangement between adjacent areas. No vessel had any hesitation in leaving its area when in pursuit of an enemy vessel.

The wild and tide-ridden Area No. 1, which we looked upon as the most stormy and turbulent of all, was commanded by Admiral Sir Reginald Tupper who presides over us to-day. From him we obtained much practical advice and help in a steady stream of valuable letters, which assisted very much with other areas. Our only quarrel with him was that he left us, and it was a great loss to this new service, struggling to find its feet and establish itself, when Sir Reginald was appointed to command the 10th Cruiser Squadron.

ADMINISTRATION AT THE ADMIRALTY.

Owing to the comparative novelty of the service, the peculiar types of vessels, and the specially recruited personnel, it must not be imagined that the initial stages of the administration of the Auxiliary Patrol were easy. It really took over two years to establish the service on a firm basis, and for the rest of the War it ran successfully without any alteration of the principles on which it had been founded. It started with a Commander, an Admiralty clerk and two male typists. It was never bigger than the Commander—one of whom was promoted to Captain during his period in the office, and the other made an Acting

Captain—four or five other officers, a naval engineer of great skill, an Admiralty Supervising Clerk—Mr. Cecil Jones, who served from beginning to end and whose services were invaluable—an Assistant Clerk, and six or seven female typists, all of whom had to work harder than they had ever done in their lives. Apart from the work of the service itself, the mail bag in the early days frequently produced four hundred letters a day. We had to get the Secretary of the Admiralty to protect us from inventors by diverting their efforts to investigators, whose sole duty was to examine what, on the whole, proved to be the demerits of their claims.

In the early stages we, of course, had to put up with the " sneer and jeer " experts, some of high rank. These individuals pretended there could be little or no value in vessels of the type we were using. One highly placed officer once said to me in a burst of annoyance, " what's the good of a stinking trawler, anyhow ? " Subsequently he took over a command in the Near East, and it was amusing to notice how busy he became with letters of all kinds, cables and wireless, until *his* auxiliary patrols were of the considerable strength he thought necessary. In 1915, when the Patrol was about 15,000 strong, a half-pay Rear-Admiral calculated it was bigger than the pre-War Channel Fleet, and in writing to that effect to the highest authorities, he expressed the opinion that it was time a Flag Officer was sent to the Admiralty to take charge of it. He submitted a list of six or seven suitable names—including his own—of Flag Officers who were not employed at the moment, and the letter was sent on to the Admiralty. The smoke screen of war had prevented him from ascertaining that about twelve or fifteen Flag Officers were already in command of various sections of it. But we had the power of requisition, and independent authority to recruit, and we had the honour to enjoy the unswerving support, assistance and guidance of each of the Lords of the Admiralty, and worked under the general superintendence of the fourth Sea Lords—Sir Cecil Lambert, Sir Lionel Halsey and Sir Hugh Tothill in turn, so we did not allow the " sneer and jeer " gentry to stand in the way very much.

The great Lord Fisher soon began to take an interest in the new service. His way of doing so, as would be expected, was peculiar. He sent for me one night and said that if an enemy submarine was not destroyed within forty-eight hours I would be dismissed, and followed up with his customary threat of " wife a widow, children begging bread, and house a dunghill." He was not in a mood to have pointed out to him a slight confusion between administration and command. After a couple of days, not free from anxiety, the good old Dover Patrol came to the rescue and destroyed " U.8 " with an explosive sweep. I, of

course, had nothing whatsoever to do with the achievement, but Lord Fisher became very friendly and helpful, except that later on he transferred his threats about "dunghills," etc., to a selected list of officers commanding areas at sea. In this case the time period for dismissal was lengthened to thirty days, but we were not confronted with the difficulty of meeting the problem because he left the Admiralty himself before the thirty days had expired. Nevertheless, he had been a mountain of strength and support all the time he was in office. His learned and kindly successor, Sir Henry Jackson, gave much advice and encouragement, and would sometimes visit the department at midnight to ask how we were getting on, and if there was anything he could do to help.

We established and printed the Red List.[1] This showed the organization all over the world with details of its grouping, the position of ships, their type, tonnage, armament, wireless, etc. At different times economy proposals were made; we converted it from a daily to a weekly publication—this got us into trouble with the War Staff when some telegrams went to wrong places; we dropped the charts of areas; proposed to drop the index and other things—and every single move of this kind got us into hot water from one direction or another. It also showed in tabulated form all casualties to vessels and the causes, also the number of lives lost. The List went right through the War, and was a very valuable publication.

Captain Dudley North, R.N., was in charge of the Auxiliary Patrol administration at the Admiralty for the first few months of 1917, and then was followed by Captain Lawrence Braithewaite, R.N., who saw it through to the Armistice. Both these officers[2] did much to strengthen and consolidate the new service.

The principle followed was to forge and establish the Auxiliary Patrol as a good weapon, and then to turn it over to the sea service to make use of, decentralised from the Admiralty as much as possible.

OPERATIONAL WORK.

It is only possible to touch very lightly on the operational work, and to give a brief outline of what was done.

In February, 1915, the question of tactics to be employed by Auxiliary Patrol vessels against enemy submarines was taken in hand, and a secret memorandum based on proposals of the Commander-in-Chief, Grand Fleet, was circulated and developed. For obvious reasons I must omit these and other confidential details. A Submarine Attack Committee was also formed, and worked in close association with us in the produc-

[1] A publication of over two hundred pages.
[2] Now Rear-Admirals.

tion of many valuable weapons and methods. One day, a prominent member of the Committee crossed the Channel in pursuit of knowledge and had his efforts quickened by being torpedoed on board the " Sussex." He was much shocked at this personal attack ! The multifarious duties carried out by the Patrol vessels included :—attacking enemy submarines ; protecting coastwise trade ; the preliminary examination and search of shipping ; protection of minesweepers and other unarmed vessels ; examination of areas before the passage of fighting ships or valuable merchantmen ; perpetual patrolling ; hydrophone work ; constant escorting of vessels either singly or in convoy into harbour or through an area ; driving submarines within reach of other craft ; conveyance of messages ; rescue of crews mined, wrecked or torpedoed ; salvage ; assisting in mine-laying operations ; watching navigational marks at dawn ; guarding mined nets and mined areas ; making smoke screens ; accompanying and rescuing crews of blockships ; landing troops, guns and stores on enemy beaches ; landing and recovering agents from hostile territory ; evacuation of wounded ; to say nothing of that horror of war " the investigation of the ever-recurring rumour ! " Towards the end of the War, some of the trawlers and drifters occasionally supplemented the food supply by casting a net.

The above are only a few of the items comprising the operational work of the Auxiliary Patrol, which really consisted of every conceivable duty arising in war, short of engaging enemy surface warships, and some of the small craft, given suitable conditions, would I believe have been capable of that also.

It was certainly a great comfort to officers commanding fleet units to know that fifty to a hundred miles from our own coastline—and farther in some cases—was being closely patrolled day and night. I commanded two light cruisers at a later period of the War and, after four or five days on the Norwegian and enemy coasts, it was a great relief to find oneself back within an Auxiliary Patrol area and to know that the chances of being torpedoed were correspondingly less.

In the Spring of 1915, a valuable suggestion came from Acting-Paymaster (now Sir Frank) Spickernell—then Secretary to Vice-Admiral Sir David Beatty, commanding the battle cruisers. His proposal was that a trawler should tow one of our submarines submerged, the two vessels being connected by telephone. This was put into operation at once, and two enemy submarines—" U 40 " on 23rd June, and " U 23 " on 20th July, 1915—were successfully torpedoed by our submarines, " C 27 " and " C 24," while they were unsuspectingly attacking the trawler. This, I suppose, was one of the ideas which developed into the " Q " ship.

There were twenty cases of serious yacht actions with enemy submarines in which damage, varying in degree from total loss to slight injury, was inflicted on the enemy. The yacht "Lorna" sank "U.B. 74" after an action in the English Channel. A squadron of eight biggish yachts, all commanded by retired Admirals, was based on Gibraltar for work in the Straits and on the Spanish and African coasts. Their services were considered very valuable there, and one of them, the "Narcissus," so damaged "U.B. 49" on 8th September, 1917, that the submarine fled into Cadiz and interned herself. "M.L. 357," commanded by Lieutenant F. J. B. Kitson, R.N.V.R., although built of wood, rammed a large enemy submarine at high speed. The submarine had risen 75 yards away to attack the French coal convoy, at the Western end of the Channel. The M.L. struck with such force that both her engines stopped on impact; she also suffered severe structural injuries. The enemy appearing again on the surface, the M.L. no longer able to ram, opened fire and, it is believed, hit the submarine, which made off and escaped. The M.L. was in a desperate state, but a trawler towed her into Penzance, where they just managed to beach her before she sank. Lieutenant Kitson was awarded the D.S.C. for his gallantry and for saving the convoy.

The Commander-in-Chief, Grand Fleet, once generously stated that without the Auxiliary Patrol the Grand Fleet often could not have gone to sea, and that the Auxiliary Patrol Service was being conducted with vigour. All eminent people in high command praised their work and their devotion to duty, and I remember in particular a letter from Admiral Sir Robert Lowry, commanding the Coast of Scotland, describing a combined operation, lasting five or six days, in which the Auxiliary Patrol continuously hunted a submarine and drove her North to the Orkneys, where she was rammed and sunk.

One armed trawler, the "Olivine," with two drifters in company, fired at and actually received the surrender of the German Zeppelin "L.15," when it came down in the Thames on the night of 31st March–1st April, 1916, and seventeen out of a crew of eighteen were taken prisoners.

I have no record of decorations, but among the R.N.V.R. officer personnel alone three V.C.s, one C.B., eight D.S.O.s, and twenty-eight D.S.C.s, were awarded—rather stingily some thought. The maximum strength of the Patrol was about 3,000 small craft and 52,000 officers and men. The latter number was bigger by 10,000 or 11,000 than the total personnel of the German High Seas Fleet. This, with its four battle cruisers, eighteen battleships, sixteen light cruisers, and seventy-two torpedo craft, had a total personnel of under 40,000 officers and men. If sub-

marines are also included, the personnel of the whole German Navy was about equal to that of the Auxiliary Patrol.

At the end of the War an Admiralty memorandum addressing the Auxiliary Patrol stated :—

> " This new Navy of small craft, created by the special needs of the War, has proved the vitality of the British instinct for the sea and of the adventurous spirit of the ' Scour the Sea Navy ' of the old sailing ship days, and has every reason to be proud of its share in bringing the War to a victorious conclusion."

It is curious how events at sea developed into a small-ship war. For four years our submarines lay off the enemy's coasts ; our destroyers were constantly at sea, and during the night after the battle of Jutland they were the only ships in the direct path of the German High Seas Fleet to its base ; the Auxiliary Patrol was at sea for long continuous periods throughout the War, sometimes quite unarmed for weeks and weeks at a time, when its craft had been deprived of every gun they carried in order to meet requirements considered to be more pressing and urgent at the moment.

OUR LOSSES.

Table I[1] shows the casualties in the Auxiliary Patrol up to the date of the Armistice. It will be seen that 437 vessels were lost, and 234 officers and 2,077 ratings lost their lives ; wounded are not included.

ENEMY SUBMARINE LOSSES.

Table II.[1] shows the losses of enemy submarines proved to have been solely attributable to direct attacks by the Auxiliary Patrol. They amounted to thirty-five. In addition, ten were lost from causes " unknown," and the Patrol may have some of these to their credit. The list omits submarines destroyed in the end by another type of vessel after combined or separate operation by Auxiliary Patrol vessels. It also omits the thirty-four enemy submarines known to have been lost in minefields, many of which mines had been laid by Auxiliary Patrol vessels.

THE FUTURE.

I feel sure that the Admiralty have, carefully locked away, definite schemes, with the various debatable points standardised, which will enable just such another service to be produced rapidly and efficiently, not only in this country but on the coasts of the Dominions, if required in any future war. But this review of what was done in the late War

[1] See p. 31.

will, I trust, assist our successors and descendants, seeing the whole matter in perspective and profiting by our mistakes, to make an even better organization—they could not produce a more gallant service—should it again be necessary to create an Auxiliary Patrol.

DISCUSSION.

ADMIRAL SIR SYDNEY FREMANTLE: I hope that amongst the volume of information and possibly of instructions bearing on the organization of an Auxiliary Patrol there is to be found a very serious warning against a repetition on any future occasion of the mistake which was made at the beginning of the War in regard to the misuse of personnel which should have been available for manning that service. As most of us know, some few days after the outbreak of hostilities a certain very high Admiralty official went down to Portsmouth and visited the Royal Naval Barracks, where, the mobilisation of the fighting fleet having been fully provided for, he found some six or seven thousand reserve men who had come up in answer to the mobilisation order and who, as they were not required immediately for any particular service, were very properly being "kitted up," having their physique and health attended to, and being exercised in the barrack square. With a limited outlook, and very little attention to the lessons of history, he said "these men are obviously not required for the Navy," and they were promptly turned into what may be called, without offence to the Royal Naval Division in its early days, amateur soldiers. There was no organisation for making them into a proper military force, but in due course that Division was formed, and these R.N.R. and R.N.V.R. men were the nucleus. That was only three months before the Lecturer was trying to recruit seafaring men of any kind at all from "under the lamp-posts."

If there is any Admiralty official here, I should be interested to hear whether such a breach of faith—it is difficult to call it anything else—has had any effect on recruiting for the Royal Naval Reserve and the Royal Naval Volunteer Reserve. After all, the seafaring population of the country is limited, and it is most important they should exercise their function of doing their share towards the defence of their country afloat and not ashore. Most sailors know that these very fine men of the fisherman class will undergo the most appalling hardships and dangers of every kind on the element to which they are accustomed, but contemplate with the greatest distaste the ordeal of having to march even a couple of miles.

BRIGADIER-GENERAL W. F. SWINY: I should like to ask what was the actual result of using the small American motor-launches to which the Lecturer has referred, and whether they were of any value or not.

VICE-ADMIRAL CRAIG WALLER: The Lecturer mentioned that the suggestion that a submarine should be towed by a vessel of the Auxiliary Patrol was made by Admiral Beatty's Secretary; that is the first time I had heard who originated the idea, although I knew the method had been employed with considerable effect. Curiously enough, I have just been reading a very lurid novel, written by an American submarine officer, in which he describes in detail this method of destroying enemy submarines. According to him, it was not Lord Beatty's Secretary who invented it, but an American submarine petty-officer. The ordinary reader would regard this as absolutely true, because the writer mentions that the petty-officer made the proposal to Admiral Sims, who at once took it up and gave the inventor a commission and sent him out in a submarine. Eventually, the tale relates, he almost went to the bottom, because the ship towing his submarine

was hit by a German submarine and began to sink; but, of course, by his great presence of mind, it and he were saved. My impression is that the "Q" ship was invented some time before the submarine towing device.

Officers who served in the fleet in Home waters during the War know what an immense service the Auxiliary Patrol rendered and what a great comfort it was, when getting within striking distance of the harbours, to be able to feel a real sense of safety. I remember when I was sent with some ships from Sheerness to the Firth of Forth what relief I felt as we went up the swept channel which was kept free of German mines from day to day by the magnificent service of the Patrol.

COMMANDER A. T. STEWART, R.N.: I happened to be Senior British Naval officer at Bizerta during the later months of the War, and had considerable opportunity to see and appreciate the good work of the Auxiliary Patrol. We had three M.L.s at Bizerta, but they were used entirely for service inside the harbour. The experience in many places in the Mediterranean and elsewhere was that these craft were of very little use ten or fifteen miles outside harbour. They were, however, most efficiently run by the officers and men who manned them. Only on one occasion were they used to escort a convoy from Malta to Bizerta. It was found quite impossible for them to keep up with convoys in any bad weather; in fact they were hopeless for that sort of work.

In various areas where decentralisation was introduced, the authorities differed very much in their ideas about running the Patrol, and there seemed to be a lack of cohesion. In the Mediterranean, in 1916 and 1917, before the convoys commenced, the Auxiliary Patrol seemed to be used largely as a number of lightships on the routes our merchant ships had laid down for them in that very dangerous area. They were scattered up and down these routes, and ships were told they would fall in with another Auxiliary Patrol vessel after steaming so many miles; the routes were scarcely ever varied. Undoubtedly that helped the enemy submarines, and on one successful cruise the "U.35" sank thirty-five or forty of our merchant ships by gunfire alone. I think the Auxiliary Patrol was grossly misused at times.

Trawlers were invaluable for escort work, and they could keep up with all the slower types of merchant ships. I recollect sending small convoys from Bizerta to Italy which were to be accompanied by trawlers and torpedo boats, but the torpedo boats were told "if you cannot keep at sea and have to come back, the trawler will take the convoy on," and that is what happened more than once.

Any officer who had dealings with the Auxiliary Patrol will recall what extraordinarily valuable services they rendered and what splendid men they were manned by. I recollect some of the fishermen and trawlermen of the minesweepers in the Dardanelles as they lay wounded on deck; and the only thing they said was "we did not expect to be in this kind of thing when we came out here." They were willing to face anything, and only complained that they had never been trained to face guns and searchlights; otherwise, they thought, they could have done the sweeping thoroughly.

REAR-ADMIRAL G. O. STEPHENSON: I had the honour of serving for about three years during the War with the Auxiliary Patrol, and for a part of that time was under Admiral Sir Sydney Fremantle. Knowing him, you may be quite certain that during that time the Patrol vessels were not used as lightships but, on the contrary, were largely used for offensive work against submarines.

The Lecturer has spoken of the decentralisation from the Admiralty, and, if I may, I should like to pay him a tribute, because one felt it was quite a new move during the War—the facility with which the Admiralty would communicate with all sorts of small fry on these matters of the Patrol craft and their personnel, and the way in which they were always ready to meet one's every wish and need.

Speaking of the personnel, there was a most extraordinary variety, from the barrister and the stockbroker in the motor launch to some of the ratings in the trawlers who could not even read a clock! Quite a number of the trawler skippers, even, could neither read nor write. I do not say that in any sense of disparagement, but rather as an illustration of how marvellous they were. Some of them took their vessels out to the Mediterranean without being able to use charts at all. If any criticism is called for, it may well be directed against our modern ideas of education, when we see how those men could rise to their responsibilities and, by their powers of observation and memory, carry out most efficiently all the duties they were called on to perform. It must be admitted, however, that we did have a little difficulty with the gentleman who could not read a clock! The Lecturer has not referred to the extraordinarily small crew we had in those trawlers. They always worked watch and watch, being on duty for twelve hours out of the twenty-four, and when there was mine-sweeping to be done everybody was on deck. But when the man who could not read a clock had to call the watch below, there was a little difference of opinion occasionally as to the time!

The Mine Clearance Service.

In paying a tribute to the Lecturer for the wonderful organization which was built up, perhaps one might, in a word, refer to that after-War organization, the Mine Clearance Service. I think that the problem with which we were confronted at the end of the War in mine clearing was probably one of the most difficult with which man has ever been faced. Everybody was dead tired of war; nobody wanted to take any more risks, and everybody, from the officers downwards, were keen to have a little rest and recreation and to get back home. But this work of clearance had to be done, and, if it had not been for the marvellous elasticity and determination of Captain Lecky, I do not think an organization could have been built up which would have met that very dangerous and difficult situation. I think we ought to be very grateful to him for what we know was the most extraordinarily successful work which he continued to do in that way after the War.

Lieut.-Commander W. F. Smithwick, R.N. (*Officer Instructor, London Division R.N.V.R.*): Admiral Fremantle asked if anyone here could say what effect the R.N.V.R. having been turned into the Royal Naval Division at the beginning of the War has had on present-day recruiting. As the present Officer Instructor of the London Division, I may say that the facts with regard to recruiting at the present time are these. I think the R.N.V.R. as a whole is about 20 per cent. below strength, though curiously enough the Scottish Divisions—the Clyde and East Scottish—are very nearly up to their full numbers. The actual number of drills put in by these men, in this Division at any rate, has, however, increased enormously during the past three years, and what they have lost in quantity they have certainly made up in quality.

THE LECTURER:

I thank Admiral Sir Sydney Fremantle for his remarks.

One member asked how the M.L.s turned out; we had to make the best of a bad job with them. They were not good sea-keeping vessels, but they were useful

in confined areas, and in smooth water at sea, in a restricted sense. The most of which they were capable was got out of them by the skill and ability of their personnel, many of whom had been accustomed to handling small yachts in difficult circumstances. We wanted craft which would hunt submarines at sea in any but the worst of weather; the M.L.s were a not unexpected disappointment in that respect. So far as their actual effect on the enemy is concerned, it is difficult to assess anything definite; all sorts of combined operations were assisted by them; the mere fact of their being in an area at all was disconcerting to enemy submarines as, fortunately, when he does not know his opponent's disabilities and limitations, an enemy nearly always overvalues that opponent's offensive powers. So far as enemy loss by direct attack is concerned I have already described how "M.L. 357" most gallantly rammed, but did not destroy, a submarine attacking a coal convoy. The only case on record of an unassisted M.L. destroying an enemy vessel occurred off Gibraltar on 21st April, 1918, when "M.L. 413," in the middle of a misty night, was passed ten yards away by "U.B. 71." The M.L. swung round into the enemy's wake and dropped two depth charges. In this case the submarine had come to the M.L., which found herself very happily situated. It was a somewhat simple case.

Admiral Craig-Waller's questions interested me very much, and I will look up the dates and communicate them to him. My recollection is that the suggestion that a submarine should be towed by and connected by telephone to a trawler originated from Acting-Paymaster Spickernell, early in 1915, and that within the next three or four months two enemy submarines were destroyed in this way. Later, the method became compromised and had to be stopped. My further recollection is that Admiral Sims did not come over from America until the spring of 1917, so I fear he could have had no connection with the matter.[1]

Commander Stewart, my old shipmate, says he saw vessels of the Auxiliary Patrol in the Mediterranean being used as lightships. I think that must have been an exceptional case where the Commander-in-Chief desired to use them to mark sea lanes for merchant vessels at some particular period of the War. The C.-in-C. would be the best judge of their utility in such circumstances. He also referred to the M.L.s shortcomings. They certainly were the most unsatisfactory part of the Patrol, but it must be remembered that even when they were at their full strength, they represented only one-sixth of the total number of vessels in the Patrol.

I should like to thank Admiral Stephenson very much for his kind remarks regarding my efforts with the post-War Mine Clearance Service. That was a much smaller, but none the less, an intricate and difficult matter. So many of the minesweeping men felt they did not care how many mines there were in the sea; they were volunteers and the War was over; they wanted to have three months rest. We had to discharge them and recruit men specially for an entirely new service. It was a question of making the conditions sufficiently attractive to the men to be recruited, and—as so often happens—of making the Admiralty orders sufficiently clear to be in every way understood by the officers and men. With the assistance of several people in the Admiralty who were specially gifted in that way, I got out a careful scheme. H.M. the King approved an attractively designed metal badge to be worn on the sleeve. Although most of the dignitaries openly stated it could not be done, after six weeks we recruited a service 16,000 strong.

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[1] The Lecturer's recollection is quite correct; *vide* Note on p. 46 of the Official History—Naval Operations, Vol. III.—EDITOR.

The Mine Clearance Service operated successfully for over two years, and they swept up about 34,000 mines, which remained as a terrible menace to the business and trade of the world at peace.

THE CHAIRMAN:

It may be of interest to state that I went to Area No. 1 on the 1st January, 1915. at twenty-four hours' notice. I was taken to Stornoway in a yacht called the "Vanessa," which became my headquarters. I had no staff whatever, but I picked up my coxswain at Portsmouth Barracks before I started North, and happened to meet Mr. Norman Craig, K.C., who was serving as a Lieutenant in the yacht "Lorna"; and, as I was made Competent Authority of the Hebrides, said to him "you know something about the law, if you don't about anything else, so come along and be my Flag Lieutenant and legal adviser and helper." I had an eighteen year old youth as a Secretary to start with, and it took me something like five weeks before things were working efficiently. At the end of six months I had 6 yachts, 36 trawlers, 40 drifters, 8 M.L.s and 6 of those extraordinary things called whalers to carry out the duties of the Area.

I spent at least four days a week at sea, visiting my patrols and searching all the fiords and so on. It was well that I did so, for the first time I went afloat I found nearly all my patrol craft in harbour; they said they went in every night because they thought that was the right thing to do! I soon disabused them of that idea, and the result was that they did very good work.

I claim that my little patrol destroyed three submarines and picked up ninety-five mines; only one merchant ship was torpedoed during my fifteen months in command. Ships of the Grand Fleet used to go down to dock through the Area and nothing happened to any of them.

The customary votes of thanks to the Lecturer and Chairman were carried by acclamation.

I. CASUALTY LIST UP TO OCTOBER, 1918.

Type	*Struck Mine*	*Sunk by enemy*	*Captured by enemy*	*Wrecked*	*Sunk by collision*	*Burnt*	*Unknown causes*	*Total Losses*
Yachts	4	4	—	2	2	1	—	13
Trawlers	141	25	—	38	38	—	13	255
Drifters	33	36	1	17	28	3	4	122
Whalers	1	—	—	1	—	—	—	2
Patrol Paddlers ..	12	—	—	—	1	—	2	15
Motor Launches ..	1	7	—	5	1	8	—	22
Motor Boats	—	3	—	—	—	3	—	6
Other Vessels	—	—	—	2	—	—	—	2
	192	75	1	65	70	15	19	437

Loss of Life : Officers, 234.
Ratings, 2,077.

II. GERMAN SUBMARINE LOSSES.

SOLELY ATTRIBUTABLE TO DIRECT ATTACK OF AUXILIARY PATROL VESSELS.

Cause of Destruction.	*Enemy Submarine.*	*Total.*
Rammed	U18, U 14, UB30	3
Explosive Sweep	U8	1
Gunfire	UB4, U 74, U109, UB85, U34	5
Netted	UB26, UB44	2
Mine Nets	UC3, UC21, UC50, U66, UB75, UB53, U75	7
Bombed	UB13	1
Depth Charge	UC7, UC66, UC41, UB66, UB63, UB82, UB71, UB31, UC78, UB74, UC77, UB110, UB107, UC49, UB103, UB115	16
	Auxiliary Patrol—Direct Attack ..	35

Total losses in war : 178
Surrendered 176

Notes :—

1. Some of the above enemy submarines were sunk by gunfire, after being forced up by depth charge ; some were sunk by depth charge, after being forced down by gunfire.

2. The above omits :—
   (*a*) Combined Auxiliary Patrol operations leading to submarine destruction by some other type of craft ;
   (*b*) The thirty-four submarines destroyed by mines, some of which were laid by Auxiliary Patrol vessels ;
   (*c*) Ten enemy submarines missing at the end of the War, some of which may have been destroyed by Patrol vessels ;
   (*d*) Any injuries caused, apart from total destruction.

THE AUXILIARY PATROL IN THE WAR

THE WORK OF THE BRITISH ARMY IN THE FAR EAST

By Colonel G. Badham-Thornhill, C.M.G., D.S.O.

On Wednesday, 11th January, 1933, at 3 p.m.

General Sir Robert D. Whigham, G.C.B., K.C.M.G., D.S.O., in the Chair.

The Chairman, in introducing the Lecturer, stated that he had been Military Attaché to His Majesty's Government at Peking for four years, and after that had been senior Staff Officer with the British Troops in Shanghai, while as a young officer he had been in China at the time of the Boxer rising in 1900.

LECTURE

I WOULD like to begin by emphasizing the fact that any opinions of a strategic nature or such as deal with political matters which I may put forward are purely personal; they cannot therefore be regarded as reflecting official opinion or even as representing views held by our authorities on the spot.

The subject itself is also delicate since China is a land of paradoxes, full of disconcerting problems, which cannot be judged from too normal a standpoint. In addition, consideration must be given to the fact that for many centuries China has had a civilization of her own, containing many features worthy of study. It is also necessary to remember that there are two sides to every case, as those officially connected with the many and complex questions which go to make up the actual Chinese situation can testify.

On our existing maps of China, Mongolia and Manchuria are shown as integral parts of the Chinese Empire. But this is no longer the case. Mongolia, i.e., Outer Mongolia, has become to all intents and purposes a fraction of the Soviet Union, although she nominally acknowledges the suzerainty of China. Manchuria is in the melting pot. With Jehol, these North Eastern provinces, three in number, were at one time autonomous; but since early 1929 the situation became somewhat changed as a result of the substitution of the Nationalist flag of China for the five-bar flag which up to that time had proclaimed Manchuria to be a separate entity.

HISTORICAL SURVEY

The situation of Britain in China, unlike that of those Powers who arrived there afterwards, is and always has been peculiarly delicate, due to the fact that, with the possible exception of the Portuguese, the British were the first on the spot. Our dealings with China go back to somewhere about A.D. 1600. Trade was our motive then as it is to this day. If we have not continued prospering as of old, we must remember that there are now many competitors in a field where formerly there were only a few. At the present moment we are inclined to take unction to ourselves that we are not as others are. Our reward may be great in heaven but not on this earth ; the Lord still helps those who can adapt themselves to circumstances.

So it is for us to give full credit to those of our merchant adventurers who built up the beginnings of our trade with China ; though I doubt if their methods were always as we should have them to-day.

Our first open breach with China occurred in 1839. This affair is commonly miscalled the Opium War, due to the fact that opium formed a distinct portion of the cargoes that were being imported into Canton at that time. Demand for redress of general trading conditions and of the disabilities under which the merchant of those days laboured were really the cause of the dispute, which ended in 1842 with the Treaty of Nanking. It was this treaty that gave us possession of Hong-Kong, while other stipulations contained therein opened certain ports in China, including Shanghai, to foreign trade. We are therefore pioneers in every sense of the term ; we fought for equable trading relations while other nations followed. The latter profited greatly, and may now be seen riding on the backs of those, who, through circumstances not always under their control, are forced to follow a hard and fast policy, if their legitimate interests are to be protected. The noisy element, so much in evidence in China nowadays, can always be relied upon to refer to the days of England's imperialism in the past. Can a leopard change his spots, they ask ? But they fail to note that history teems with instances of the Chinese brand of the same animal changing its whole coat in a day.

Returning to actual history, it was this Treaty of Nanking, together with its counterparts made by one Power or another about the middle of last century, which marked the beginning of the system of extra-territorial rights about which so much is heard to-day. The Treaty was shortly followed by the war of 1856, which led to the occupation of Peking and the sacking of the Summer Palace by French and English troops in 1860. The instrument which ended this adventure is known as the Treaty of Tientsin. It emphasized the recognition of extra-territoriality, opened new ports to trade and incidentally gave us the

strip of land, known as Kowloon, on the mainland of China facing Hong-Kong. But it was not until what is called by the Chinese the aggressive period of 1898 that this small area was extended on a ninety-nine years' lease to include a further tract commonly known as the Kowloon Extension or the New Territory. Wei-hai-wei, which has recently been rendited to China, was also acquired at this time. Arrangements to hand back the last-named place were all but completed as long ago as 1928, when the hurried departure of the then Chinese Foreign Minister put an end to the negotiations. Such is the outline in brief of how Great Britain finds herself in possession of a negligible, but very important, strategic island and strip of mainland on the South Eastern coast of the huge area known as China.

In addition to the two above-mentioned wars, use of expeditionary troops in China include the Boxer Rebellion of 1900 and the despatch of a division and ancillary troops to Shanghai in 1927; the facts connected with the latter move require separate discussion.

THE PRESENT SITUATION

The despatch and arrival of the British Shanghai Defence Force at Shanghai in early 1927 is perhaps the most important event of this period. The causes of this action are many and deep-seated. Concomitantly with the victorious advance of the Nationalists from Canton northward, a mob seized the Foreign Concession at Hankow. Signs were not wanting that, encouraged by unexpected success, it was intended to repeat the operation towards Shanghai. Such reports reaching England, the British Government decided, as a precautionary measure, to despatch a force of sufficient strength to ensure the safety of Shanghai should the Nationalists attempt to repeat their mob tactics at that place in the hope that the foreign settlement would thus fall into their hands. The arrival of the force had the desired effect; the troops were not called upon to do more than take up positions along certain defence lines; danger gradually faded away and the units were gradually withdrawn. Since then the situation, as far as Britain is concerned, has been one of watchful waiting. It was not till the Sino-Japanese affair, early in 1931, and then for different reasons, that the situation again became sufficiently unstable to necessitate the reinforcement of the troops at Shanghai. One battalion and a battery of mountain artillery were then sent up from Hong-Kong on board a cruiser. The journey was made in record time and is useful as illustrating what can be done in times of emergency, while also showing co-operation between the Services at its best.

ORGANIZATION OF THE CHINA COMMAND

The arrival of the Shanghai Defence Force necessitated the initiation of a dual command in China, having headquarters at both Shanghai

and at Hong-Kong. With the gradual dispersal of the Shanghai Force the system reverted to that formerly existing, viz., one China Command with headquarters at Hong-Kong.

The present strength and distribution of the troops in the command is roughly as follows:—

1 battalion at Tientsin and Peking;
2 battalions at Shanghai;
3 battalions, with the normal artillery pertaining to the fortress, at Hong-Kong;
1 squadron R.A.F. based on Kin-tak in the New Territory.

In addition there exist useful Volunteer Corps at Hong-Kong and Shanghai with a newly-organized semi-military unit at Tientsin. A special note about the Shanghai unit may not be out of place. The strength of the Corps is just under 2,000. It is equipped and paid by the Municipal Council, an internationally elected body. The commander, adjutant and instructional staff are British; otherwise the British War Office exercise no control whatever over the force. It is an anomalous situation, but in view of the many nationalities, including Chinese, concerned in its composition, there seems no solution but to leave matters as they are. Nevertheless, some reorganization has taken place as a result of the lessons learnt from the recent upheaval in Shanghai. On paper these changes sound well; square pegs have been set into square holes, and modifications in certain units have been designed to meet local conditions. The march past and turn-out of the Corps, after peace was restored at Shanghai, was very creditable. It was also a matter of interest to note that the Chairman of the Municipal Council took the salute surrounded by high diplomatic, naval and military representatives of all countries. The Japanese contingent, officers and men, were absent by arrangement, since all ranks had been sent "on leave" after taking a prominent part in the previous operations. Their role, in collaboration with their army and navy, was one of acting as guides, interpreters and friends rather than as combatants, although the British rifle, with which they were equipped, was also employed at times.

FOREIGN TROOPS AND THE CHINESE PROBLEM

The reasons for the presence of troops of various nationalities being kept at several points in China can never be properly understood unless the characteristics of the people and the peculiarities of the Chinese situation as a whole are taken into consideration. The Chinese are peaceful, easy-going fatalists. Gamblers all, they have a keen sense of humour; this latter trait is the note to strike if dealings with them are to be pleasant. Usually law-abiding, they have long forgotten the art of really destroying one another. They indulge in wars, but not wars

such as we know them; intrigue and compromise still play a far more important role in Chinese quarrels than the bullet or the bayonet. The Northerner is more phlegmatic than his confrère of the South; this fact to some extent explains why more is heard about the Cantonese in these days of alarums and excursions up and down China. It is the Cantonese who loudly proclaim the pace, but they do not always stay the course.

China is a vast country, of varying climatic conditions. Communications are bad; there exist only about 3,000 miles of railway in China proper. But there were at one time plentiful inland waterways, i.e., rivers and canals; these, with one or two notable exceptions such as the Yang-tse and the West River in the south, have all suffered to an extent quite unimaginable in this country. These ancient highways have so far fallen into disuse that the country has naturally and gradually become split up into parties and factions understanding little, and caring less, about one another. There are, however, signs of improvement in the matter of road communication—dirt tracks and the motor are together working a revolution in the matter of movement in the interior of the country. Officialdom now encourages enterprise in the way of bus-routes and of road-making; formerly all Chinese authorities merely regarded such enterprises as fair game in the hope of a little "squeeze." This and other factors give reason to believe that there is some hope for regeneration in China in spite of the croakings of those who daily preach her shortcomings. Moreover, China has an uncanny way of surviving her upheavals and calamities; it is just when all seems lost that latent forces appear and things go on pretty much the same as they were before.

It must be borne in mind that lack of mutual understanding on the part of both sides is to some extent responsible for much of the present trouble in China. Except in a coastal fringe of about thirty miles in depth, intercourse with the foreigner is very limited. Coast-port Chinese and the noisy returned-student element have between them contrived to convey to the inarticulate masses that the presence of the foreigner is responsible for all their ills; thus it is that the flames of "anti-foreignism" dating back to the old Canton trading days are kept alive. The foreigner in his turn points to disintegration, default on loans, chaos, banditry and other shortcomings, emphasizing the fact that until the Chinese learn to govern themselves, foreigners will remain unwilling to surrender any of the Treaty rights so hardly acquired in the past. Hence we have the resident of the Treaty Port who views China as a mere geographical expression with no hope for the future, and the moderate thinker who sees a possibility that out of the present chaos

some form of sane government will one day emerge. One view is policy without regard to realities, the other sees light where there is only a flicker, and hopes for the best. Give China a helping hand, these latter say, and all will come right in the end. Both policies are being exploited in the country to-day ; it may well be that a judicious combination of both is what is really required.

THE BRITISH ARMY IN CHINA

Before recounting the present activities of the British Army in China it might be well to emphasize the fact that the sole reason for the presence of our troops in China is Commerce. This necessarily means that our nationals resident in the country, in the legitimate pursuit of business and trade, must be protected. Despatches and communications to and from the British Government on this subject at the end of 1926, that is prior to the despatch of the Defence Force to Shanghai, abundantly stressed these two points. Since then we continue to pursue what may be called a policy of patient conciliation ; but it is a role that troubles the British actually in China, many of whom think the correct procedure should be peaceful persuasion with a blackthorn held in reserve. They, if we are to believe all that is said by them when thoroughly aroused, pass sleepless nights while policy dallies with a deplorable situation.

The actual work of the soldier varies from readiness to go anywhere as occasion demands, whenever British interests are in jeopardy, to actually keeping guard, as is the case with the 150 men or so who form what is known as the British portion of the International Legation Guard at Peking, or Peiping as it is now called. These guard duties are a legacy acquired as a result of the Boxer Rebellion of 1900. Formerly the capital of China, Peking is connected to the Treaty Port of Tientsin by a railway in which a good deal of British capital has been sunk. Troops here remain useful in the event of there arising any disturbance on the same lines and of the same nature as the Boxer outburst of anti-foreignism, while in addition they serve to keep open communication with the sea. The walled defences of what is known as the Legation Quarter are anathema to Nationalist China who, in order to keep the pot boiling for purposes of their own, think it politic to make as much capital as possible out of this one further proof of foreign imperialism. The move of the capital of the country to Nanking, though really dictated by more potent reasons, is often ascribed to the standing menace furnished by pressure of the very attenuated body of foreign troops now forming the International Legation Guard. Escorts, special messengers and ceremonial duties connected with the Legation keep the men tolerably busy all the year round.

As an instance of a sudden call to move further afield, the rapid transfer of troops up river by cruiser to Hankow from Shanghai in 1931 may be cited. The bandit menace, which during the last few years has threatened to submerge the whole of Central China in chaos, had suddenly taken a turn for the worse. The comparatively reliable Chinese divisions responsible for the safety of this important region were away on railway protection or special bandit-suppression duties in other areas, leaving defence to unreliable units or ill-armed provincial formations. Hankow itself was threatened and the foreign communities, fearing the entry of hordes of Communist bandits into the Concession or into other special areas, sent S.O.S. messages either through their respective consuls, or direct if the latter official, who naturally carries more responsibility, was considered to be too optimistic in his views of the situation.

Speaking from experience, I would stress the necessity for ignoring the normal chain of command on such occasions; very often speed is the whole essence of such an operation. Luckily, on this particular occasion, the danger, as often happens in China, did not eventuate; the bandits are never anxious at such a stage, if they can possibly avoid doing so, to become embroiled with foreign Powers. There being now no British Concession the troops had of necessity to live on board ship, a fact which led to a certain amount of discomfort for all on board.

Troops in China often find themselves detailed as escorts to ships of private shipping companies. This duty arises as a direct result of the frequent acts of piracy committed on ships at sea and to a lesser degree, on smaller craft up the rivers. Interference by war-lords and firing from the banks by ill-disciplined troops and bandits on shipping also contribute towards a desire on the part of the shipping companies to obtain protection of some sort. The result is that ships from the big liner down to the small river craft often employ military guards varying from six to twenty men as escort during a part of or for the whole voyage. By arrangement the companies feed and look after the men. The latter like the change from normal routine and get a wonderful chance of seeing the country. Another insult to their sovereignty says the irresponsible and noisy Chinese element; but the Chinese merchant is very much more guarded; he overlooks this slight and prefers to travel in comparative safety on a ship which he hopes will reach its destination without mishap.

It is at Shanghai, the chief port and industrial centre of China, that emergencies great and small arise at a moment's notice. A very efficient police force deals with minor disturbances or the efforts of noisy agitators to create trouble. But very often troops have to be held in readiness in the event of matters taking an ugly turn. The police incident of 1925 is an instance of what may occur in Shanghai without warning. Here,

after a series of minor incidents, the police were forced to fire on a student mob causing a few casualties. This had the effect of inflaming the whole Chinese population, until there took place a general anti-foreign outburst chiefly directed against Great Britain. Luckily no serious incidents have occurred recently, but there have been times when the temper of the troops has been sorely tried.

The Sino-Japanese dispute has not been without serious reaction on the part played by British troops in Northern China and Shanghai. It must be borne in mind that defence arrangements in China are, except in isolated cases, an international matter and plans are worked out accordingly. The decision of the Japanese to act quite independently, therefore, caused considerable consternation in those quarters where such schemes are usually worked out. Attacks by Chinese hirelings on the native city, which lies adjacent to the Japanese Concession in Tientsin, caused much anxiety in the adjacent Concessions and defence sectors; there always existed the possibility that the trouble might spread. This meant ceaseless activity on the part of the various contingents not actually engaged. The Chinese attacks were not pushed home; actual disturbance died down, though with feeling between the Chinese and Japanese thoroughly roused. The situation has been anything but pleasant for those who have to be constantly on the alert in case of a new outbreak.

The Japanese operations at Shanghai were more serious in their repercussions though here at least it was a case of open hostilities. But the issues were most complicated, while situation after situation arose with lightning rapidity. From the British point of view everything was at stake, since the risk was imminent that the fighting would embroil the whole community and endanger the International Settlement and French Concession. Reinforcements from all sides were urgently summoned. A British contingent arrived with admirable promptitude and immediately took up defence positions in part relief of the Volunteers, who, after the first clash between the Japanese and the Chinese, had a hazardous and anything but an easy part to play.

It might be mentioned that it was the act of a Volunteer officer and his men manning the sector adjacent to Chapei where all the pother started, which probably changed the whole course of the operations. His instructions were, as far as I can recollect, to the effect that no troops of either side were to be allowed to utilise the British sector for purposes of attacking the other. Shortly after the first shots a Japanese officer with lorries full of men proposed to sally through a British defence gate for the purpose of taking the North Railway Station in reverse and thus turn the Chinese line of first resistance. This officer, acting on instruc-

tions and unwilling to sanction the move, telephoned to his Headquarters who confirmed the instructions. The Japanese eventually abandoned the idea.

Awkward instances of this nature were at first frequent, till the Japanese came to realize that it would be better not to antagonize the whole of the international contingents. In view of the heavy fighting that took place on the borders of the Settlement it was extraordinary that so little material damage was done to international property. Japanese aeroplane bombs caused some damage and the Chinese put some shots into British property in their efforts to find the Japanese Consulate and the flagship moored alongside. But objections made by international representatives to both sides saw some improvement, except for odd shots let off by Chinese field-gunners who put deflection on their weapons in the wrong way. The fighting is now a matter of history; suffice it to say here that the short campaign upset some preconceived notions of the value of the respective sides. Peace terms were eventually arranged, and if no collisions of serious importance have occurred since, it might perhaps be inferred that those who worked so hard to bring about a cessation of hostilities have been rewarded for their labour.

No account of the activities of the British Army in China would be complete if the part of the soldier himself were not mentioned. His general behaviour is one that any nation might be proud of; his unfailing good humour, and willingness to tolerate others has won for him the admiration, if not the affection of the Chinese, who are not given to discrimination between foreigners. I cannot say that the relations between the international contingents are uniformly as good as they might be; in fact, I know of instances where very much the contrary is the case. The exact reasons for these occasional feuds are hard to define; the phases run in cycles. It is often difficult to account for one nationality at the moment hating another, when formerly between them there existed nothing but friendliness.

Mention must be made of the part football plays in improving relations as between ourselves and the Chinese. Our troops have made the game so popular that it is now a matter of doubt whether American baseball or "soccer" will become the national game of China. The Chinese student takes to one or other with enthusiasm when he is not meddling in the more hazardous game of international politics.

CONCLUSION

I wish once more to make it clear that the sole reason for the presence of British troops in China is the protection of commerce and those of

our nationals who reside there for trade. If I lay stress on the necessity for knowledge of the country it is because a long acquaintance has forced me to the conclusion that much of the trouble in China is due to the lack of understanding on both sides. The exclusiveness of the average Britisher does not help his case in China; more co-operation and endeavour to meet the other side half-way would, I am certain, do much to ease the entire situation. It is true that conciliation without evidence of strength has elicited little response in the past, but there are hopeful signs that the Chinese are beginning to realize that we have no ulterior motives beyond protection of our legitimate interests. Unfortunately, the present-day Chinese politician is very prone to look at all that has happened in the past through League of Nations spectacles. This gives him an astigmatism which will take some time to correct. The bulk of the Chinese are illiterate; phrase-bound expressions and catchwords, now employed by hot-headed returned students of the American brand, do far more harm in China than in countries where the man in the street is in a position to appraise such vapourings at their true worth.

Nevertheless, we must recognize that China is going through a period of regeneration. In the meantime our vast interests must be protected. But is this a reason why we should take up a despairing attitude and assume that nothing can ever come right in China?

DISCUSSION:

CAPTAIN C. R. MAJOR asked the reason why the Franco-British force went into China in 1860.

LIEUTENANT-COLONEL W. H. JONES enquired whether the Lecturer considered Manchuria to be an exceedingly rich country. He wished to know whether it is rich agriculturally, rich in minerals, or rich in other respects.

THE LECTURER'S REPLY:

COLONEL G. BADHAM-THORNHILL: The British and French troops went to Peking in 1860, for much the same reason as they might go nowadays. We sent out missions to China and the Chinese refused to receive them and subjected Lord Macartney's mission to indignities; he declined to submit, whereupon the Chinese refused to see him, so that he was unable to put our case, which was trade, before the Emperor. Then piracy was afoot, chiefly at Fuchow, where the French were fired on by the forts. So the French and British decided to move together, and the Taku Forts, the same forts which gave so much trouble to the Allies in 1900, were taken. The reason why the Summer Palace was sacked was that the Chinese would give no satisfactory answer to the Allied demands, no undertaking, and refused to meet any of their representatives.

Mongolia is divided into two by desert, Inner and Outer Mongolia. The power in Northern Mongolia is Russian, that of the Soviet Union, while the Chinese are, for the moment, holding on to the other.

Manchuria is rich agriculturally and minerally—I can say both without any hesitation. The Japanese have found some very rich coal mines; while the country also contains sodium, salt, gold and almost every kind of valuable mineral. Agriculturally, the country will grow anything; the richness of the harvest is proof of the richness of the soil. That is why the coolie has been migrating so much from the Southern Chinese provinces. He makes a good living there, but it is a rough, isolated life; yet he generally prospers. He only wants to be left alone, and to send for his family. There is no doubt that within a short time Manchuria would, under normal circumstances, be entirely occupied by Chinese. Koreans and Japanese form a very small minority of the total population.

THE CHAIRMAN'S SUMMING UP:

Whatever part the British troops may have played in the past, in the 1860 campaign let us say, I think the Lecturer has conclusively shown you that, to-day at any rate, there is no aggressive purpose in the presence either of British troops or of His Majesty's ships in the Far East. Indeed, it is not too much to say that the immediate result of the timely arrival of a British force in Shanghai in 1927, and again in 1932 of those reinforcements which the Lecturer mentioned, was a change from a somewhat electrical atmosphere to one that was considerably calmer. I should like to remind you of what most of you here probably know, that the role of the regular Army to-day is that of Imperial defence; that is to say, the policing of the British Empire and Mandated Territories, and, in addition to that, the protection of British interests and British lives in those localities where storm centres are likely to develop. It has carried out this role in recent years with marked success, not in China alone, and has proved itself a factor of incalculable value in the maintenance of the world's peace. This happy result is in no small measure due to the personal qualities of the British soldier, whose cheerful manners and friendly ways have made him the best Imperial policeman imaginable.

Colonel Thornhill gave us a most lucid account of the position in China to-day. The dominating factor is the situation in Manchuria, but as that is already being dealt with by the League of Nations we must leave it there. I would only like to express the hope that in the effort to find a satisfactory solution for a most difficult situation nothing may be done to impair the traditional friendship of the British and Japanese nations.

The customary votes of thanks to the Lecturer and to the Chairman were carried by acclamation.

POSSIBLE RESULTS HAD MODERN AIR RECONNAISSANCE EXISTED IN 1914

By MAJOR R. S. WATERS, O.B.E., late 40th Pathans, I.A.

SOLDIERS, like the Duke of Wellington, who had a remarkable *flair* for divining the enemy's hidden dispositions, have always wanted to see "on the other side of the hill." A first effort in this direction was made in the Revolutionary Wars, when the French, after the invention of the balloon, conceived the idea in 1794 of employing a captive balloon as a tactical accessory at the battle of Fleurus against the Austrians.[1] Eventually two companies of balloonists were formed and despatched in 1796 to the Armies of the North and of the Rhine. There, especially in the latter case, they distinguished themselves by the successful collection and transmission of information.

Nevertheless, on taking over the Revolutionary armies, Napoleon, by one of those curious *lacunae* in the minds of the greatest leaders, failed to perceive the tactical value of even this rudimentary form of air observation, which in actual fact was eminently suitable to the limited battlefields of those days.[2] So on his return from Egypt, in 1798, he not only closed the Ecole Nationale Aérostatique but, in the following year, also disbanded both companies of the Balloon Corps and sold their gear. Yet the benefit to the French armies of balloon observation during the Napoleonic campaigns and in the Peninsula[3]—perhaps most of all during the Waterloo campaign—would have proved incalculable.

Again, in 1812, a Russian mechanic designed a dirigible airship which was to drop bombs on the enemy, but the experiment failed and the inventor was imprisoned—he was a hundred years before his time! Thereafter, air observation languished till the Austrians used balloons against Venice in 1849. Balloons were next employed in the American

[1] They "strongly objected" to this method of waging war and subsequently announced that all French balloonists who fell into their hands were to be treated as spies!

[2] For strategical reconnaissance the balloon would normally be useless.

[3] Actually the use of a captive balloon during the Peninsular Campaigns was referred to in the Centenary Number of this JOURNAL, but the writer has been unable to trace the reference.

Civil War, and almost simultaneously in a South American disturbance. But Britain, as has been usual in the past, allowed others to do the experimenting. Early British efforts with balloons were, therefore, delayed till the latter part of the last century—in Bechuanaland, Egypt and in the South African War. Next, by a gradual process of development, the captive balloon merged into the rudimentary airship driven by a petrol engine. The Germans attempted to use the rigid airship in 1914 for military purposes, without success, and the balloon was then finally abandoned for the heavier-than-air machine. It is, however, with the results which might have followed if air reconnaissance as we know it to-day had been available in the opening stages of the Great War that it is now proposed to deal. In other words, it is our purpose to examine how the employment of modern aircraft might have affected the war of movement up to and including the Allies' failure to break through on the Aisne on the 13th-14th September. Such a study seems profitable since any future war must open with the employment of almost untried scientific equipment.

Twelve "Situations" are dealt with, and these will be considered from the standpoint of both belligerents, while, with one exception, they will be confined to the western or strategic wing of both sides.[1] Since, however, modern air observation in any one of these "Situations" might have entirely transformed the course of the War, each "Situation" must be considered without reference to previous or subsequent air observation or operations. The course of the early operations as modified by modern air reconnaissance cannot be reconstructed to that extent.

As to the question of the interception of reconnaissance[2] aircraft it is necessary to assume that sufficient machines would have been available to ensure that they would not all have been brought down and that the information postulated in each "Situation" would have been safely received. Such interception would undoubtedly have occurred—probably on a large scale, but it is unlikely that definite superiority in the air would have been established by either side during these opening stages of the War.

Situation 1: The German Strategical Concentration and Deployment.

The French Plan XVII, involving a headlong offensive, had been based on a total misapprehension of the moral and physical resources of the Germans, with the result that the British Expeditionary Force,

[1] The author claims to possess no special knowledge of aircraft.

[2] The employment of aircraft in capacities other than that of reconnaissance is not dealt with.

by prolonging the French left, was bound to the wheels of their strategical chariot.

On the assumption that the concentration of the German First and Second Armies, as it actually took place, had been detected by aircraft to the north-north-east of Aix-la-Chapelle and in rear of the line Aix-la-Chapelle—Malmédy respectively, it is doubtful whether Joffre would have been justified in extending his left to meet a wider turning movement than was originally envisaged by Plan XVII, to meet which the insertion of the (Reserve) Fourth Army in the line was legislated for. Moreover Plan XVII was essentially offensive in its meaning.

As soon, however, as the deployment and direction of the German First and Second Armies had been definitely detected, the matter would have assumed a different aspect, though until Kluck's leading corps had emerged from the corridor between Liége and the Dutch *enclave* of Limburg little information of vital importance could have been obtained. For the First Army might have been directed on Perwez and Gembloux instead of on Diest and Tirlemont.

But on 15th August Kluck's leading corps were on the line Bilsen—Membruggen—Tongres, a progress that should have made G.Q.G. suspicious of the intended outflanking movement. That this to some extent actually occurred is signified by the surrender of the strategic initiative by Joffre, though even now he had not realized the strength and direction of Kluck's turning movement, for as late as 21st August the French Intelligence reckoned on only five German corps north of the Meuse whereas in reality there were thirteen. Efficient air reconnaissance should have corrected this mistake though previous to the 21st the weather had occasionally been unsuitable for observation. On 15th August, however, *Instruction Particulière No.* 10 was issued, which decreed the move north of most of Lanrezac's Fifth Army and the insertion of the Fourth Army in the line.

As to the Allies' counter-measures we have to take into account the deeply-rooted French doctrine of the offensive at all costs. Only the imminence of severe strategical and tactical defeat—as eventually was the case—could have caused its abandonment. Nevertheless it seems that the only course open to G.Q.G., now presumably acquainted with the German preliminary movements through French and British air reports, should have been to abandon a large slice of French territory without fighting, and to withdraw the whole army, including the B.E.F., to a line further back[1] as soon as the full weight and extent of the German

[1] Say, Verdun—the Aisne to Craonne—Laon—La Fère—Ham and the Somme. Thus, incidentally, Kitchener's forecast that Amiens was a sufficiently advanced locality for the concentration of the B.E.F. would have been substantiated.

outflanking movement had been established. By such a move the long Allied retreat could have been avoided, although the French prehistoric minor tactics must almost certainly have ensured their defeat in the opening actions.

SITUATION 2: THE GERMAN FAILURE TO LOCATE THE B.E.F.

The German O.H.L. (G.H.Q.), and consequently Kluck, were ignorant of the presence of the B.E.F. on the line of the Mons—Condé Canal. Kluck, indeed, had halted his forces for two hours on 23rd August, the actual day of the battle of Mons, as a rumour reached him that British troops were detraining at Tournai. The Germans were obsessed with the idea that the B.E.F. had landed at Ostend, Dunkirk, Boulogne or Calais, and that consequently their communications ran east and west. Photographic long-distance air reconnaissance should have discovered the port or ports at which the B.E.F. was disembarking. For the B.E.F. had reached the Maubeuge — Le Cateau area from Havre between 12th and 17th August, but by the latter date Kluck had advanced barely half-way to Brussels, while Bülow had hardly progressed beyond Liége. Thus, though it would have been feasible to reconnoitre the Belgian and French ports from Antwerp to Calais even from as far back as Aix-la-Chapelle—the average distance being 160 miles—Havre presented a different problem. Possibly reconnaissance from Metz—a flight of 270 miles out and back—would have been adopted, though the double journey over the rearward zones of the French armies might have proved hazardous. In any case, traffic on the railways[1] leading from Havre north-eastward should have confirmed information otherwise acquired. By a process of elimination the fact that the communications of the B.E.F. did *not* run east and west should have been established.

SITUATION 3: HOW LANREZAC AND FRENCH WOULD HAVE FARED BETWEEN 15TH AND 20TH AUGUST.

On 15th August definite information was received from the Belgians that 200,000 Germans were crossing the Meuse below Visé. G.Q.G. accordingly ordered Lanrezac to move from his original ground about Sedan and Mezières into the triangle between the Meuse and the Sambre, while the Fourth Army was inserted into the line. On the 20th Lanrezac was still waiting to commence his offensive movement from the southern bank of the Sambre. On the same date the B.E.F. had practically completed its concentration in the area Maubeuge—Le Cateau, and was preparing to move forward on the 21st to align itself with the French Fifth Army. If now, instead of the dense fog of war, which actually

[1] French mobilization had been practically completed by the 12th.

prevailed, the direction and strength, not only of Kluck's but also of Bülow's and Hausen's columns had been detected the situation would have been very different.[1] For on the evening of 20th August Kluck had reached a line Ganshoren—Waterloo, facing south-west, and it would have been evident that his IVth, IIIrd and IXth Corps had wheeled in that direction during the day. Moreover there was the menace of his IInd Corps echeloned in rear of his first line about Vilvorde. This fact alone would have made Lanrezac and French suspicious of the extent of the German outflanking movement. Bülow, though his left was attacking Namur, was just sufficiently far distant from the Sambre for Lanrezac to retire in safety after destroying the bridges, while Hausen's main bodies were still farther back above the fortress.

This being the case it is possible that Joffre would not have allowed his Fifth Army to be exposed to the converging attack of Bülow and Hausen on 22nd-23rd August, or the B.E.F. to come within an ace of falling into the German trap with only the slenderest French support on its outer flank.[2] Thus a retirement on the evening of the 20th might have been ordered while there was yet time.[3] Possibly one of the chief advantages would have been that the mutual distrust and suspicion sown by Lanrezac's action on the 22nd-23rd would have been avoided.

Nevertheless we have again to take into account the cult of the offensive fashionable in France since the abandonment of Plan XIII of 1896 to such an extent that the acceptance of a retirement, for strategic reasons which could not mature for some few days, at any rate in the case of Kluck, might not have proved acceptable to G.Q.G. On the other hand, Joffre, as soon as he was acquainted with the German plan, or rather with as much of it as he was able to ascertain, did not hesitate to order a general retreat.

SITUATION 4: GENERAL FRENCH'S AGREEMENT TO REMAIN ON THE MONS—CONDE CANAL FOR A FURTHER TWENTY-FOUR HOURS IN RESPONSE TO LANREZAC'S REQUEST.

During the early part of the 22nd the information, derived largely from the R.F.C., is best stated in the words of the Official History—

[1] That such flights were feasible at the time is shown by the fact that the R.F.C. carried out several reconnaissances on the 19th and 20th, notably on the latter date when a long enemy column was seen passing through Louvain. Previous to the 19th, however, there had been patches of weather which did not favour the aircraft of 1914.

[2] The writer is assuming considerably more confidence in air reports than was shown at the time, at all events in the case of British G.H.Q.

[3] See Situation I.

"The sum total of these observations was to the effect that brigades[1] of German infantry, probably amounting to a corps in all, filled the roads south of Grammont, that a cavalry division was at Soignies, and that the general front of this corps and cavalry division extended, facing south-west, from Lessines to Soignies, no part of these being west of the Dendre Canal . . . . Their further advance, if the direction was maintained, would bring their left (East) flank to Mons."

Thus up to this time G.H.Q. had no conception of the weight or scope of the German blow. Later, however, considerable numbers of German troops were reported in the triangle Nivelles—Charleroi—Soignies (actually Bülow's VIIth Corps); Kluck's IXth Corps was located near Soignies and another column, supposed at the time to be his IInd Corps, but probably part of his IVth, was marked down on the march westwards through Ladeuse to the south of Ath. Further, the presence of a cavalry division with its head at Peruwelz was observed and evidences of a strong force moving south down the Brussels—Soignies road had been seen. Later still, a long column marching west was spotted on the Brussels—Ninove road and from the latter town it had been seen to turn south-west towards Grammont. This column was subsequently identified as Kluck's IInd Corps.

Such was the information about the German plan available at the G.H.Q. conference held at Le Cateau late on the 22nd, when the above quoted decision was adopted. It was also known that Lanrezac had commenced to retire after the unsuccessful battle of Charleroi and that Smith-Dorrien was already some nine miles ahead of the main line of the French Fifth Army. One of Kluck's corps, however, had not been located at all, the IIIrd, which halted that night west of Soignies. Neither had his IVth Corps, which had been marching towards Ath from the north-east, been properly identified, and no mention is made of the IVth Reserve Corps which had halted that day in Brussels. Thus, though the infant R.F.C. had actually done more than could have been expected of it, it is suggested that modern machines and organization would have located the missing corps, and revealed the danger threatening the British right from Bülow's VIIth Corps[2] owing to Lanrezac's retirement and its probable continuance on the 23rd.

Is it not therefore likely that French, influenced by these suppositious reports, granted that he was amenable to them—a confidence which G.H.Q. generally did not share at the time—would *not* have met

[1] The German brigade contained two regiments, each of three battalions and a machine gun company.

[2] Actually this Corps only reached Binche midway between Mons and Charleroi by the following night.

Lanrezac's request even to the extent of consenting to stay on the Canal for another day? By a retirement on the morning of the 23rd, or even during the small hours of the night, the battle of Mons would have been avoided and arrangements might have been made to fight on the Le Cateau position with both Corps united after passing the Forest of Mormal. In this case small rearguards might have been left to dispute the passages of the Canal. Whether Lanrezac's co-operation at Le Cateau would have been obtained is doubtful as his distaste for that particular operation was already sufficiently manifest. But even if it had been decided not to fight at Le Cateau, *time*, the one great necessity during the coming days, would in some small measure have been saved, though the ill-feeling created at G.H.Q. by the Fifth Army's retirement without notice might still have prejudiced future co-operation. On the other hand, Kluck, commanding the outer army of the German strategic wing, would not have received the check he actually experienced at Mons—a check estimated at twenty-four hours; while the B.E.F. would not have demonstrated its superiority in arms over the German forces, much to the increase of its own *morale*. Again, Kluck's IInd Corps, on which he was relying for the outflanking movement, would have had more time to come up. Finally, it is difficult to see in what way the fact of Kluck's knowledge of the strength and dispositions of the B.E.F., obtained through modern air reconnaissance,[1] would in any way have altered the British commander's decision.

SITUATION 5: KLUCK'S MISDIRECTION OF MARWITZ' CAVALRY AFTER LE CATEAU.

In this Situation the facts are simple and incontrovertible. The British retirement from the battlefield commenced from the right flank about 3 p.m. in a direction nearly due south towards Estrées—Beaurevoir—Le Catelet—Vendhuille. The retirement was protected by certain detachments, mostly from the right centre westwards, who not having received the order to go back unwittingly acted as stationary rear-parties. On the other hand, we know on Kluck's authority that Marwitz' Cavalry Corps bivouacked west of Cambrai that night, almost at right angles to the British line of retreat! Further, his infantry columns next day moved on in the south-south-westerly direction they had followed on the march to the battlefield, while this direction tended to become even more westerly in the course of the next forty-eight hours. Thus, owing to Kluck's misconception as to the communications of the B.E.F. (see Situation 2), not the slightest attempt was made to employ

[1] The only possible result could have been further delay on Kluck's part in order to complete his wheel to the south, in which case the Battle of Mons would have followed a different course, even if fought at all.

Marwitz' cavalry in the correct tactical or strategic direction. Next day it was marching down the Cambrai—Bapaume road to intercept the British retirement westwards!

Two of Marwitz' cavalry divisions had been rather severely handled during the battle, as the Cavalry Corps had been ordered to detain the British pending the arrival of the infantry on account of the misconception just referred to. The third (4th) division, however, had suffered little and was fit for further action, while the march of the Cavalry Corps as a whole to the battlefield—from the neighbourhood of Avesnes-lez-Aubert, 6 miles E.N.E. of Cambrai had been short. If, then, even the 4th Cavalry Division alone had pressed into the area south of Le Cateau, making a wide detour if necessary, soon after the retirement of the British 5th Division had become evident, it should at least have accentuated the disorganization of the retreat and widened the gap between the two British corps.

Kluck at his command post in the Quievy—Viesly area would have learnt sufficiently soon the true direction of Smith-Dorrien's retreat to launch at any rate his one unshaken cavalry division in an immediate pursuit round the eastern flank of the retiring troops, a move to which Allenby's tired horsemen could have offered little opposition. The remaining two cavalry divisions could then have followed up as soon as their reorganization had been completed. With the B.E.F., or rather its western corps at least, out of the way, Kluck might well have succeeded in coming in on Lanrezac's left flank at or even before his crossing of the Marne. This, in turn, might have led to the pressing back of the whole of the French armies on the Moselle fortresses or against neutral territory. With modern air reconnaissance at his disposal, moreover, Kluck would not of course have fallen into the mistake of imagining that the British position ran north and south. His dispositions for battle would, presumably, have been quite different. In that case he would have been confronted with the alternative of launching his cavalry in pursuit by the western or eastern flank. Possibly the western flank might have proved the more tempting, owing to the position of the cavalry corps at the end of the battle, though as it turned out it would have made little headway against Sordet. On the other hand there was a considerable gap between Smith-Dorrien's right and Haig's left consequent on passing the Forest of Mormal.

Situation 6: Kluck's wheel to the South-South-East on 30th August.

There is no need to discuss the grandiose German plan to pass west of Paris and to drive the whole of the French armies eastwards against the Moselle fortresses and neutral territory. Neither need mention

be made of the expected results of Kluck's inward wheel. But with the best will in the world it is impossible to visualise circumstances in which modern air reconnaissance would have assisted him to consider any other course than that actually followed. It could not have helped him to realize that the B.E.F. was still a force seriously to be reckoned with or that Maunoury after his " defeat " on the 29th still provided the nucleus of a fresh French army.

For these two factors, apart from Bülow's message (see below) and the shortage of troops on the western wing of the German armies (which factor, however, was present probably in the mind of O.H.L. *only*), are generally considered to be the mainsprings of Kluck's decision to wheel inwards. It would for instance be interesting to be able to attribute to modern air observation the adoption of a rather more restricted outflanking movement by Beauvais in the hopes of trapping both Maunoury and the B.E.F., unless in the latter case the British commander's retreat had been sufficiently rapid to escape the net, as was not wholly unlikely in his then frame of mind.

Late on 30th August Kluck turned from south-west to south in response to a request, as we are to suppose, from Bülow to exploit his alleged success at Guise.[1] On the 31st the inward wheel of the whole First Army towards the south-south-east commenced. This fact was definitely reported by the R.F.C. and was immediately communicated to Joffre, who next day received confirmation from the map of a cavalry officer captured by the Fifth Army. Modern aircraft could scarcely have done more in rendering what was probably the most vital air report of the entire war, with the possible exception of the location of Kluck's IInd Corps on 22nd August. Only in respect of speed and copiousness of reports could there have been any improvement.

Situation 7: Would Kluck have been able to crush Maunoury in time to obviate the general retreat from the Marne?

On 4th September Kluck in order to cover his wheel from the west detailed a flank guard of one corps and one cavalry division to move to the area Marcilly—Chambry, north of Meaux. On the following afternoon Maunoury attacked them in that neighbourhood, while by the evening of that day Kluck's remaining corps were across the Marne on a line approximately east and west to the south of Coulommiers.

Here again, however, the question asked in the heading seems to be largely a matter of Kluck's mentality, i.e., of underestimating his opponents. Especially was this so in the case of the B.E.F. as may be amply proved by a quotation from Kuhl's " Marne "—" He (Kluck)

[1] Kluck at this period was not under Bülow's control.

did not, however, consider that much could be expected from the British troops. After their long retreat and many defeats (*sic*) they could, he thought, be effectively held up on the Marne."[1]

With regard to Maunoury, Kluck confesses that at the time he had no information as to the strength or composition of his force, neither had he the remotest inkling of a general offensive of the Allied armies.

On 4th and 5th September, though French had been kept tolerably well informed by the R.F.C. of his opponent's moves, touch with a considerable part of the B.E.F. had again been lost by Kluck. It is now suggested that modern air observation might not only have informed him that two and a half British corps—though rated of low morale by the German commander—were so placed as to be able eventually to push into the gap, which was obviously bound to occur between his flank guard and main body, or more likely between Bülow and himself if his flank guard got into difficulties, but also that Maunoury (of slight offensive capacity though he was supposed to be) was in such a position as to be able to attack his flank guard. The assembling of a fresh French army outside his western flank was after all a fairly reasonable strategic deduction, though Kluck in making this would have been hampered by the silence maintained by O.H.L.

Even, however, if such information had been forthcoming, Kluck, in pursuance of his drive against the western flank of the French armies, would have been on the horns of a dilemma. In the absence of reinforcements he could not afford to weaken his force south of the Marne by a single corps; on the other hand he could not without subtracting therefrom have strengthened his flankguard against Maunoury. Nevertheless, it is perhaps permissible to suggest that with even only *two* corps in the Marcilly—Chambry area on 4th September it is not improbable that Maunoury's offensive capacity would have been destroyed on the afternoon of the 5th. Lamaze's group of divisions might have been crushed before the B.E.F. had even started its march to the Marne.

To sum up, the fact seems to have been that Kluck was committed by his wheel inwards to the inescapable hazard of a flank march across the front of a force, the resilience of which he had grossly underestimated, with still another hostile and increasing contingent practically in touch with his flank guard. It is extremely doubtful if modern air observation could have delivered him from all the mischances inherent therein. Actually it was a case of so near and yet so far. For, at 10 p.m. on 5th, Kluck had actually issued orders for the First Army to face round

[1] Official History, Vol. 1, p. 300.

towards Paris, in accordance with those of O.H.L., but, becoming aware later in the night of Maunoury's attack, he merely accelerated the movements of his corps, the first of which reached the battlefield of the Ourcq next day. It was, however, too late to crush Maunoury's growing force.

Situation 8: Could the advance of the B.E.F. to the Marne have been accelerated?

From the starting line of the B.E.F. on 6th September, twelve to fifteen miles in rear of where Joffre expected it to be, the distance to the northern bank of the Marne was about thirty-seven miles. While the country to be traversed presented no definite positions, the Grand Morin, the Petit Morin and the Marne, lying in deep valleys, almost ravines, formed ideal lines for the action of the German rearguards, which consisted of cavalry, jäger and artillery with an occasional backing of infantry.

The time taken over the march was four days, i.e., roughly nine miles per day. The R.F.C. rendered fairly constant and accurate descriptions of hostile dispositions mostly on the southern bank of the Marne, and very possibly these could not have been improved on by modern aircraft except in respect of numbers, speed and fullness of reports.[1]

With modern machines and organization, however, it is not unlikely that a complete grasp might have been maintained from the outset on the northern bank of the river, so that the constantly varying locations of Kluck's and Bülow's inner flanks might have been noted and information gathered of the ever widening gap between the two. The importance of this gap would quickly have become apparent as soon as Kluck's retirement commenced on the morning of 6th September, while knowledge, such as this, might conceivably have diminished the somewhat excessive prudence which characterised the higher leading of the B.E.F., due to the sudden change from retreat to advance and the previous experiences of G.H.Q. with Lanrezac and G.Q.G. This in turn might have brought the British advanced guards to the Marne twelve or even twenty-four hours earlier, while the difficulties of Kluck and Bülow, especially of the former, would have been increased in direct proportion to the earliness of their arrival.

[1] On 7th September, however, German columns, later identified as Kluck's IIIrd and IXth Corps, were observed moving north and north-west on their return from Bülow's command. Also on the 8th, the R.F.C. reported that the enemy was not standing to fight on the Marne, but that their main forces were between Nanteuil and Chateau Thierry. Nevertheless Joffre's instructions of that evening tend to suggest that he had only just grasped the full import of Kluck's manœuvres.

In reality, the comparatively small casualty list tends to show that the advance was not boldly pushed onwards, possibly owing to lack of information of the opportunity offered; although it has to be remembered that the river lines formed superb positions for delaying action. In the measure mentioned, then, it may be tentatively assumed that modern air observation would have shortened the time taken by the B.E.F. to reach the Marne and cross it.

SITUATION 9: THE BATTLE OF THE MARNE EXCLUDING THE WESTERN FLANK.

The ability to undertake modern air reconnaissance would probably have been of very considerable advantage to both the German command and to G.Q.G. perhaps in a greater degree to the former during the latter stages of the fighting. For instance, Hausen had evidently failed to realize and take advantage of the weakly held gap between Langle de Cary and Foch, while the same may be said of Würtemberg and the Crown Prince in respect of the junction between Sarrail and Langle de Cary. Modern reconnaissance flights should have disclosed these weak points in the French line, and their recognition in time might have resulted in the penetration of the hard-pressed French centre or right. From this might have resulted the complete abandonment of the Allied offensive on the western flank and the rolling up of the Allied Armies on either side of the point or points of penetration against the Moselle fortresses and Paris respectively.

Modern aircraft, moreover, should have kept O.H.L.—far back at Luxembourg 130 miles away—more closely in touch with the course of the action, or rather series of actions of which the great battle consisted. Thus the sending of Hentsch, their plenipotentiary, on a circular motor tour round the headquarters of the Armies might have been obviated; for the aeroplane journey[1] would have taken only a fraction of the time taken by car, which on several occasions was delayed by traffic blocks or panics. By this means vital time would have been saved, though it is hardly possible to speculate whether such saving of time would have been of practical benefit. To G.Q.G. the advantage conferred by a modern air organization would perhaps have been not quite so obvious other than, of course, on the western flank, where the issue of the battle was being decided by the offensive of Franchet d'Esperey, French and Maunoury, owing to their greater proximity and grip on the course of the fighting.

[1] This, however, strictly speaking, would not have been a reconnoitring use of the aeroplane.

SITUATION 10: HAIG'S HALT ASTRIDE THE MARNE ON 9TH SEPTEMBER.

The advanced guard of the 1st Division had reached a point some four miles N.N.W. of Nogent shortly after 10 a.m., while that of the 2nd Division, after being delayed at the bridge at Charly, had secured the northern bank without fighting. The passage of the river had been covered by two cavalry brigades.

About this time the R.F.C. reported "large hostile forces halted North of Chateau Thierry and others moving westward upon Domptin, just west of the position of the 3rd Infantry Brigade"[1] (the advanced guard of the 1st Division). Haig thereupon halted the Ist Corps till 3 p.m. Subsequently a further advance was undertaken till the heads of both divisions had reached the Chateau Thierry—Montreuil road at dusk.

But, from German sources, we now know that these "large hostile forces" consisted only of the main body of the 17th Division (Kluck's IXth Corps) and that those moving west on Domptin of one of Bülow's cavalry divisions.[1] The question at issue, then, is whether or not modern air observation could have acquired such definite information about the strength of these forces as would have enabled Haig to come to a different decision. It is suggested with some confidence that this would have been the case, especially as the weather had not yet broken, though how the more exact information postulated would have altered the course of events is naturally a matter of opinion, if indeed a different decision had been come to at all. It is, therefore, not proposed to discuss any measures that might have been taken by Haig except to stress the fact that the advance, if resumed after a short interval, would have made the situation of the 17th Division somewhat precarious, even if only continued as far as the Chateau Thierry—Montreuil road for the time being. The German cavalry moving on Domptin would no doubt have offered some opposition, but that could probably have been dealt with by the united efforts of the cavalry covering the advance and a flank guard detailed from the 1st Division.

How far beyond the Chateau Thierry—Montreuil road the advance could have been carried would probably have depended on the progress made by the IInd Corps.[2] Anyway, under the conditions assumed, the necessity for the five-hour halt would have been difficult to understand. On the other hand one must reckon with the fact that the caution displayed in the higher leading of the B.E.F. since the beginning of the advance had not yet completely disappeared.

[1] See Official History, Vol. 1, p. 289.

[2] Actually the Chateau Thierry-Montreuil Road also marked the limit of the day's advance.

SITUATION 11: DID KLUCK AND BÜLOW INTEND TO HOLD THE AISNE AS A REARGUARD OR BATTLE POSITION? [1]

It is categorically stated in the Official History that on 10th September the weather conditions made R.F.C. reconnaissance impossible till the late afternoon and that on the 11th and 12th even worse conditions prevailed. On the 11th only two reconnaissances were possible and "very few" on the 12th. Franchet d'Esperey's air service was, of course, similarly placed.[2] Thus facilities for the air observation of 1914 hardly existed during those three days. Proceeding, however, on the assumption already made that modern aircraft can obtain comparatively detailed information under bad weather conditions, it seems possible that such reconnaissance would have discovered some indication of, at any rate, Kluck's[3] intentions. The question was vital and its solution was urgent. The main indication of whether Kluck, and Bülow, intended to continue the retreat or stand fast would have been provided by the presence or absence of preparations for a further retirement to the La Fère line. In short, it is highly probable that if Kluck intended to use the northern bank of the Aisne as a rearguard position only, his main bodies would have been on their way northwards on the 12th, as he had begun to cross the river on the previous day. So, even allowing for the extremely bad weather of the 12th some glimpses of them should have been obtainable from the air.

On the other hand Kluck and Bülow might have halted on the Aisne merely to give their weary forces a short breathing space in a strong position and to reorganize their corps with a view to resuming the retirement later. That, however, is a supposition which could not have carried much weight with G.Q.G. That Kluck and Bülow had been reported practically intact on the northern bank when the Allied left wing reached the river was the chief item of information required by the Allied High Commands. For the hope of penetrating the gap, which had existed between Kluck and Bülow since the battle of the Ourcq, formed the immediate strategical objective to be achieved—that is, of course, failing the continuance of the German retreat.

SITUATION 12: THE GAP BETWEEN KLUCK AND BÜLOW ON 13TH-14TH SEPTEMBER.

At dawn on 13th September the gap, held by three cavalry divisions only, between Kluck's left at Vailly and Bülow's right about Berry-au-Bac,

[1] Actually there was no doubt at G.H.Q.—the pursuit was to be continued (Official History, Vol. I, App. 44). This of course reflected the ostensible view of G.Q.G.

[2] Maunoury had been without aircraft at the Ourcq.

[3] Kluck, from his position on the western flank, is taken as the criterion. O.H.L. are not likely to have abandoned their First Army to facilitate the withdrawal of the remainder.

was eighteen miles. Later in the day the arrival of the VIIth Reserve Corps (from Maubeuge) reduced it to thirteen miles, and one division of this corps finally established itself on the Chemin des Dames about 2 p.m.—just in time to prevent Haig's leading infantry from reaching that line about two hours later. Moreover, the situation was rendered even more critical by the Corps Commander's ignoring Bülow's instructions to move in a south-easterly direction towards Berry-au-Bac as he considered his divisions already too far committed to their present direction.

The R.F.C. had evidently located the division which was destined to block Haig's advance, but, owing to the unsettled weather conditions of the morning, they were too late. The division, when observed, was already in position on the Chemin des Dames. Could modern air reconnaissance have reversed this procedure? The VIIth Reserve Corps had bivouacked that morning at 6 a.m. in two columns south and south-east of Laon. This being the case, and following the assumptions previously made as to air operations in bad weather, is it not probable that the roads leading northwards from the Chemin des Dames would have been scoured for reinforcements coming up from dawn onwards? Failing this, the southward march of the corps from La Fère might have been detected from the air on the previous day.

On the other hand, Haig had not prepared a formal attack, thinking that he had merely to deal with cavalry and a few batteries; but, had he known in time of the approach and direction of this particular division, he might have endeavoured to accelerate his advance to the utmost while throwing in every available reinforcement. If, however, Haig had been successful, Kluck's left would have been turned and it is more than likely that the First Army would have been driven in a north-westerly direction by the combined efforts of the B.E.F. and Maunoury. In that case it would be fruitless to attempt to define the probable course of future operations, except perhaps to hazard the possibility that the years of trench warfare to follow would have been avoided. The fact that such an issue should have been staked on a mere matter of hours makes this Situation one of outstanding importance.

Meanwhile Franchet d'Esperey's left corps had been attacking the eastern end of the Chemin des Dames ridge in order to penetrate the remainder of the gap. But next day, when a German force of cavalry and infantry had just been driven back near Craonne, the arrival of their XVth Corps during the early afternoon restored the fight. French air reconnaissance, however, with modern machines and organization would probably have located this corps in time for counter-measures to be taken, though the possibility of these appears somewhat doubtful. With

this repulse the last hope of separating the two German armies vanished into thin air. On the other hand, Franchet d'Esperey's success might have turned Bülow's right, following which it is probable that he, with the rest of the German line as far as Verdun, would have been shouldered off to the north-east with results which, again, it is impossible to forecast.

Summary.

To attempt the assessment of the cumulative effect of modern air observation, whether employed by one or both sides, on the events leading up to the anticipated break-through by the allied forces on the Aisne, would be unprofitable, and would constitute a purely academic study. In any case it becomes impossible without drawing unduly on the imagination. It would seem, however, that Situations 2, 3, 5, 7, 9 and 12 would, given successful air reconnaissance by the side concerned, have constituted definite potential turning points in the fighting on the Western Front, although it must be admitted that the facts and factors adduced in Situation 7 do not lend themselves too readily to the conclusion reached. Actually Situation 6 is just as important since the beginning of Kluck's wheel to the S.S.E. signified the first step in the eventual German defeat on the Marne, but as the wheel from its inception was duly reported by the R.F.C.—and taken advantage of—it has not been included in the above list.

The study of these Situations would seem to lead to the conclusion, not only that the opening phases of any future war will differ appreciably from those of 1914, but also that modern air reconnaissance, and, in fact, progress in scientific equipment generally, will transform the entire beginnings of a campaign. Indeed, a belligerent who has failed to adapt himself to these developments must be liable to find himself the victim of total surprise. On the other hand, as has already been suggested, even though the opposing sides in 1914 might have had the most perfect resources for air reconnaissance, there would still have remained the personal and mental limitations of the various commanders.

But it must not be forgotten that much must always depend on the efficiency of the air elements. If these are inefficient, badly handled or mistrusted, the balance will almost certainly incline sharply against that side. On the contrary it is likely that even the best of air information could not save a commander from his own folly, if he fails to gauge a situation correctly.

"THE GRASSHOPPERS AND THE OAKS"

"Fair is our lot, goodly is our heritage."

By A FLAG OFFICER.

THE lecture on "The Study of War by Junior Officers" given at the Institution last year[1] was followed by a discussion in which officers of all three Services took part, and subsequently articles have appeared in the JOURNAL on the same subject. The interest aroused is symptomatic of the present day attitude towards the education of the officer, and the change of outlook in this respect during the last two decades has, indeed, been almost startling. There is, however, one aspect which is seldom if ever touched on and yet, to-day, it is of transcending importance. In Service educational establishments a critical survey of the operations in past wars is an important feature of the various courses. Principles are evolved, the consequences of a false strategical plan are explained, the harvest that can be garnered from good strategy is demonstrated, tactical situations are examined and the lessons drawn. But there are two very different methods of making this historical survey. It can be made with a generous mind, eager to appraise skill and gallantry whenever they can be found, with a feeling of pride that great commanders have come from British stock, and with a desire to throw into the highest relief the successes instead of the failures. Or it may be made in a mean, highly critical spirit which passes over all that is gallant and inspiring; which obtains more satisfaction in revealing causes of failure than in emphasizing causes of success; and which, when examining the character of the great men, prefers depreciation to appreciation.

Operations at sea are very rarely wholly successful. In the rapidly moving panorama of naval battle there are not a hundred but a thousand factors at work, any one of which may in an instant turn a most successful opening phase into a lame ending or rob an Admiral of complete and crushing victory when it is almost in sight. There is hardly an operation or a battle in the pages of our naval history that could not have been more successful if everything had happened exactly as planned. It is this that makes the task of the critically-minded so easy.

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[1] "The Study of War by Junior Officers," by Major J. K. McNair, R.A., published in the JOURNAL of May, 1932.

Burke wrote " Because half-a-dozen grasshoppers under a fern make a field ring with their importunate chink, whilst thousands of great cattle reposed beneath the shadow of the British oak, chew the cud and are silent, pray do not imagine that those who make the noise are the only inhabitants of the field; that, of course, they are many in number; or that, after all, they are other than the little, shrivelled, meagre, hopping, though loud and troublesome, insects of the hour."

Is the 'grasshopper' spirit or a finer and more generous attitude to prevail? That is a question of very great importance to-day, because the generation which now supplies lecturers and instructors is passing and a new generation is taking its place. This new generation has had no practical experience of war, and because it has not served under and known the men who led in the Great War, it will be influenced mainly by what it reads and hears at a receptive age. Great exploits are bred by great tradition. When, after the lapse of a hundred years, the roar of guns once more reverberated in the Low Countries and across the Narrow Seas, it was tradition, not practical war experience, that stood our armed forces in good stead. If, after another long interval, the fleet once more puts to sea cleared for action, the British naval officer must once again be strengthened by tradition, by a feeling of pride that he belongs to a Service which once counted men such as Hawke, Rodney, Nelson, the Zeebrugge heroes, Beatty, the submarine commanders of the Great War, and the 'Q'-boat men amongst its numbers. He must be imbued with the determination to prove that the old fighting spirit survives, and by a passionate desire to live up to the standard set by the great sea captains of the past. But he will not be so strengthened if the chink of the 'grasshopper' echoes round the corridors of the places of learning, and if history, which must form the basis of so much of the teaching, is dealt with in a minor key.

It may be well to emphasize at once that this is no plea for glossing over mistakes or for indulging in irresponsible hero-worship as will be made clear later when dealing with practical illustrations.

The matter has become all the more important lately because we are at a critical stage in the history of the Navy. Gone is that overwhelming strength in great ships that we enjoyed for a quarter of a century; gone, too, is that freedom in construction of which our designers made such good use. We are tied and bound by agreements to limit tonnage and to limit numbers, and the bonds may be still further tightened ere long. Our fathers were not content with anything less than a two-power standard; to-day we must be content with a one-power standard. We are back once more to a state of affairs familiar to Howe, Rodney, Jervis and Nelson. In all those long drawn-out wars

of the XVIIIth century—those wars distinguished by fierce combats between the main fleets, by bloody fighting between lesser forces, by combined operations on a great scale—the British fleet was, on paper, the inferior force; and yet it won through in the end. Numbers of ships, tonnage, calibre of guns, size of personnel, can all be accurately put down on paper and comparisons drawn between navies; but the efficiency of the personnel, the fighting spirit of officers and men, the measure of determination to win through against odds, the degree of willingness to take hazards to achieve victory, these are things that cannot be recorded in cold print. They are almost impossible to put to comparative test, and yet, in the past, they were the main cause of the successes of the British Navy.

There were, of course, no educational establishments in those days; there was but one school, the school of practical experience. Wars followed in quick succession. The instructors of the rising generation were giants. Hawke was taught by Anson. Rodney, Howe and Hood watched with eager admiration Hawke's strategy and Hawke's culminating moment when he followed the enemy into Quiberon Bay with a rising gale behind him. Jervis studied the actions of his great predecessors and knew what to do when his time came. Nelson watched and profited by everything that was done in peace and war by Jervis and Hood. These great sea-captains had with their own eyes witnessed the triumphs of their predecessors; it was a magnificent school.

We live in a very different age. The minds of the leading statesmen in all countries are bent towards making war as a means of settling an international quarrel a thing of the past. It takes a bold man to prophesy the measure of success that will eventually crown their efforts, but it can be said, without fear of contradiction, that major wars will not follow one another in this century with that regularity which was a feature of the XVIIIth Century. And this means that the naval officer of the future will not have the opportunity of being "blooded" as a Midshipman in one war, earning promotion as a Lieutenant in the next, further proving his worth as a Captain in a third and, perhaps, flying his Flag in a fourth. He will not be able to learn in the finest school of all. The fleet he knows will be the fleet of the great Captains, but the school they learnt in will not be available.

It is for this reason that so much importance attaches to the methods adopted in places where the rising generation are taught. As practical illustrations of what is meant, let us take two wars of widely different character: the American War of Independence, and the Great War, and see how the 'grasshopper' might view some of the principal engagements and, by contrast, how they appear if studied in a more generous spirit.

Rodney's Operations in 1780.

The battle off Cape St. Vincent and the battle of Martinique were engagements of first importance, but both led to much controversy at the time, and the incidents connected with them have been variously interpreted by historians in later years.

In the case of the battle off Cape St. Vincent, the 'grasshopper' will accept the view that Rodney was a sick man and that it was the Flag Captain who took control of the situation. He will quote the latter's correspondence in support of this contention, or he will dilate on the inefficiency of the Spanish fleet at that period; or he will pass the battle by as one of little importance.

It is not altogether easy to argue with the 'grasshopper.' Rodney was ill; Young, the Flag Captain, did claim the credit in his letters home; the Spanish fleet was inefficient; and the victory had little effect on the war. But if approached from this angle a very remarkable deed that should be an inspiration to the naval officer is shorn of its glory and a false doctrine of responsibility is accepted. In its true light this battle presents a very different picture. Rodney was on his way to relieve Gibraltar before crossing the Atlantic and assuming the high command for the forthcoming campaign in the West Indies. A lesser man, without incurring censure, might have ignored the Spanish fleet and refused to be deflected from his course for Gibraltar. Not so Rodney. It was his first chance in high command and he showed inflexible determination to come up with the enemy at all costs, a characteristic that shines like a bright light throughout his career. A gale was rising, a heavy sea was running, the light was beginning to fail, all the hazards of night fighting would have to be faced, friend might be mistaken for foe. Yet Rodney never hesitated. If, as Young states, Rodney could not leave his cabin, it does not detract one iota from the credit for bringing the enemy to action. That is his and his alone. It does not matter what the Flag Captain said or thought. The responsibility rested with one individual, the Commander-in-Chief. That great man, acting on reports received from time to time, ordered the fleet to drive on through the night towards the shoals off the Spanish coast, because by doing so there was a victory to be won.

Next, the battle of Martinique—an indecisive action, but one widely known and often quoted because a tactical plan went awry owing to misunderstanding and because of Rodney's striking denunciation of his Captains afterwards. Here the 'grasshopper' will see a classic example of failure on the part of an Admiral to take his subordinates into his confidence and to inculcate them with his tactical ideas. He will point out that many of the Captains who were concerned were proved men

who would never have been guilty of hanging back when there was fighting to be done, and that the signals made were open to misinterpretation. He will probably delve no further into the matter, and if he does stop there, no one could say he was wrong. Rodney was a difficult man to serve: he was censorious, he was irritable, and gouty; he did not take his subordinates into his confidence; he ruled them with a rod of iron; and, consequently, the fleet was not a perfect fighting machine. But there is another and a finer view which should be stressed and which provides a splendid example for all time.

Firstly, many of Rodney's ships had suffered in the previous hurricane season, and were showing the inevitable results of campaigning without a good dockyard under their lee. Moreover, Rodney knew the enemy fleet in the area was at least equal, possibly superior, to his own, and that it was in better condition. But this only had the effect of increasing his determination to bring the enemy to battle and of causing him to turn his original mind to the tactical problem in order to outwit his rival by some new manœuvre. The outcome was the plan to bring his full force on a part of the enemy's line, which, in the event, failed to materialise for the reasons given. Secondly, if his Captains were slow, he himself did not fail to set an example. His flagship was thrown into the fight as soon as possible, and it was that ship which bore the brunt of the action. Thirdly, despite his bitter disappointment, as soon as the enemy had broken away, he ordered his ships to make good defects with all speed, sent out his frigates to keep touch, and, the very moment he was able to set sail, he was off again, burning with the desire for battle.

Now all this is great history. It would be a mistake not to lay emphasis on and draw a lesson from the main cause of failure—which was the strained relations between Rodney and his subordinates; but it would be a greater mistake to ignore the finer aspect, which forms such a valuable object lesson.

The Battle of the Saints.

With the possible exception of the battle of Jutland, no naval action has provided so much controversy as Rodney's culminating blow, and consequently this battle offers splendid material for the 'grasshopper.' The principal subjects for criticism were whether Rodney had previously decided on the manœuvre of breaking the line, whether it was his own plan, Sir Charles Douglas's idea or even that of some junior officer, and whether he was ill or well advised to call off the pursuit of the French fleet when he did. The 'grasshopper' will quote contemporary writings to prove that Rodney had not thought out the manœuvre, that Sir Charles Douglas, the Captain of the Fleet, was the originator; that, in

any case, it all happened by chance and that it was singularly fortunate for Rodney that Commodore Affleck and Captain Gardner had the courage and imagination to see what was required, and, by breaking through at other parts of the line, to complete the manœuvre and the discomfiture of the enemy. On the question of subsequent pursuit, a particularly uncharitable 'grasshopper' will tear Rodney to pieces. The French fleet was beaten and running before the wind, yet Rodney hove to and did not follow. "We have done very handsomely" he said, to Hood's disgust.

The controversy over the authorship of the manœuvre is reminiscent of that after Rodney's battle off Cape St. Vincent, already quoted. It is the old story that after victory many will come forward to claim credit, but after defeat, only one man, the Commander-in-Chief, can be found to bear the responsibility. It does not matter a jot whether Sir Charles Douglas, the officer-of-the-watch, or a Midshipman suggested porting the helm and cutting through. Many suggestions were probably made to Rodney which, if acted on, would have led to disaster. He and he alone had to take full responsibility; he alone had to answer to his King and country for whatever resulted, whether victory or defeat; therefore he alone must be given full credit for a decision which was frought with such vital consequences. It was a great decision made by a great man.

As to the question of pursuit, there can be no doubt that Rodney did not make full use of his opportunities, though Hood's statement that the whole French fleet might have been destroyed is absurd. The French fleet had proved that they could outsail their opponents, and those of their ships whose sails and spars were in serviceable condition would probably have been out of sight in the morning. But there may have been ships whose sailing powers had been reduced by gunfire, and these might have been added to the list of prizes if a general chase had been ordered. To condemn Rodney out and out, however, is to ignore all that had gone before. All his life he was obsessed with one thought, to find and fight the enemy. His failure to pursue can only be accounted for by fatigue of mind and body. Ever since the morning of the 8th April he had been endeavouring to bring the French fleet to action. He had nearly succeeded on the 9th, when his van had a serious fight with a part of the enemy fleet, and all through the long hours of the 10th and 11th he must have been pacing up and down the poop and wearing himself out with eagerness and restless energy. Then, after these days of strain, came a long drawn-out engagement. Is it surprising that Rodney, never a strong man, was tired out by the evening of the 12th? The generous mind, while not excusing the failure to pursue, will see

in this tangled page of history an object lesson that it is the human factor that counts in the end, and that in protracted operations it is of vital importance that the Commander-in-Chief should have on his staff, or in his ship, officers on whom he can place implicit reliance, so that he himself can get much needed rest and be fresh in mind and body when the big decisions have to be made.

The Great War.

Now let us turn to the Great War—a war of many disappointments, and therefore a favourite field for the 'grasshoppers.'

When hostilities ended there had been no great sea victory, yet the surrender of the German fleet was the most dramatic finale to any naval war recorded in the pages of history. But, though the people of this country and the Empire were lulled into belief that the surrender was all and more than was hoped for, the truth is that a smashing sea victory at, say, the time of Jutland would have altered the whole course of the War. If the German fleet had been completely defeated on the Jutland Banks, the British naval effort could have been pushed right into the Bight, and enemy submarines shaping course for their hunting grounds on the oceanic traffic routes would not have been able to emerge from or return to the Bight with a happy feeling of security. Naval officers knew this, and to them the War ended in disappointed hopes. Yet, though nothing happened at sea to cause the crowds to march the London streets with torches in hand, roaring down the noise of the traffic with patriotic songs, there was quite enough to prove that the mantle of the great sea-captains had descended on worthy successors. The books and articles written for the purpose of belabouring this or that Admiral are now, of course, on those pathetic shelves in second-hand book shops, where the fifteen-and-sixpenny of yesterday is offered at the much reduced price of two shillings. The events of the Great War can now be dispassionately discussed in the schools, and there are great lessons to be learnt, but, as in the case of the other wars, all depends on the telling.

From the wealth of material available, the battle of Heligoland, the "Goeben" operations, and the battle of Jutland are selected as they are all of first importance and of widely different character.

The Battle of Heligoland.

This affair is probably one of the best examples in history of the consequences of orders and signals going astray. The story is set forth quite simply in the Official History. A well-designed operation deteriorated into a complex affair in which battle cruisers, cruisers, destroyers, and submarines were, so to speak, all over the Bight, none knowing

friend from foe. It is a tale that a ' grasshopper ' will enjoy telling, and he will, of course, be right in laying full emphasis on the mistakes made in the sending and receiving of messages. But if the story is left there and the final phases—the clearing up of the situation by the battle cruisers—be passed over quickly as a providential ending to a minor operation that at one time looked like ending in disaster, then a story of courage, audacity and remarkably fine judgment, which should serve as an example and inspiration for all time, will be left untold.

The conditions were these. Urgent calls for help were coming in from the light forces, the enemy by this time might have a battle squadron in the area, our own submarines were in the area, it was believed enemy submarines were also operating, and the mist was thickening to the eastward. Seldom has a commander been faced with such a difficult situation. But the courage and judgment necessary for bold action were not lacking, and of this episode the official historian has written : " It should live as a fine example of making good a tangled situation, which but for the decision and resourcefulness displayed on the spur of the moment might well have been very far from the enheartening success which the moment so sorely needed."

The lessons that can be learnt from a study of the inception of the operation and the subsequent signals are important and deserving of close study, but the greater lesson is to be found in that magnificent final phase.

The " Goeben " and " Breslau."

The " Goeben " and " Breslau " operations had no such fortunate ending as that affair in the Bight. They ended in complete failure and, the usual corollary, a keen hunt for scapegoats. Many of the leading participants have taken up their pens to explain that it was not their fault, and the Official History makes it clear that failure was not due to any one individual, but was the result of progressive mistakes. The historian says " The Admiral's failure was due at least in part to the fact that owing to various changes in the situation it was practically impossible for the Admiralty to keep him adequately informed. The sudden pressure on an embryonic staff organization was more than it could bear, but the fact remains that intelligence essential for forming a correct appreciation of the shifting situation either did not reach him or reached him too late and, what was more embarrassing, his original instructions as to his primary object were not cancelled when they were rendered obsolete by the action of the Toulon fleet." These operations will probably be studied carefully in places of learning, and it is possible that the official historian's view of the matter will give place to other views as a result of discussion and deep probing into all the historical

information that has come to light in recent years. Whether or not that is the case, the operations will always form a useful object-lesson of the confusion that can arise when too many cooks stir the ether. The 'grasshopper' will find something to his own taste in this story. He can set about him lustily and belabour all and sundry.

But, important as are the lessons to be drawn from this story of failure, there is one feature which at once raises it from a story which we would like to forget to one which should be a source of pride and inspiration to future generations of naval officers. In the telling of the story, it is the work of "Dublin" and "Gloucester" that should be thrown into the highest relief. The Admiralty comment ran: "The 'Goeben' could have caught and sunk the 'Gloucester' at any time . . . The combination of audacity with restraint, unswerving attention to the principal military object viz., holding on to the 'Goeben' and strict conformity to orders, constitute a naval episode which may justly be regarded as a model."

Now here is a thrilling and inspiring page of history that should be known and appreciated by every naval officer. But beware the 'grasshopper'; the rest of the story is to him so much more attractive.

JUTLAND.

Lastly we come to Jutland—a battle that was half-begotten and therefore, like so many battles of the past, one that was certain to raise a storm of controversy. As a result of fuller and more dispassionate study, opinion is gradually solidifying on some points which at one time were ripe subjects for argument. For instance, the method of deploying our battle fleet is now recognised as the only correct tactical movement under the circumstances. Moreover, the tremendous difficulties with which the Commander-in-Chief had to cope at this juncture, owing to lack of accurate information, are now known, and the skill, calm judgment, quick and accurate appreciation that were reflected in the deployment signal are justly praised.

On some other points opinion will probably remain fluid for many years. Did we appreciate too much for the enemy and overrate the torpedo menace, and did the enemy do likewise and overrate our guns? Was our whole battle plan and training too rigid and designed for one purpose—a duel between the big ships whilst the small ships kept the ring? Was the enemy better equipped for a modern action by training and planning on very different lines? Did material considerations loom too large, and a mathematical conception of battle prevail to the detriment of other factors which in the past brought us victory at sea? These are the kind of questions that will be debated long after the

participants have passed to their long rest. We must hope that judgment on these matters will not be over-hasty, and that full significance will be given to each of the many factors which influenced the momentous decisions which had to be made in those critical years—years during which the British fleet was the keystone of the Allies' war plan.

It is just because there is so much on which there can and will be two widely differing opinions that Jutland offers such a happy hunting ground for the ' grasshopper.' Indeed, a pugnacious or sour-minded ' grasshopper ' will find everything wrong. But if this battle is dealt with in a carping spirit, not only will a great wrong be done to the memory of those who were responsible for the movements of the British fleet and its squadrons, but much that should act as an inspiration and an example to future generations will be lost. The determined and skilful handling of the battle cruisers under conditions of a severity never before experienced in naval warfare, the remarkable services of Rear-Admiral Goodenough's light cruisers, the valour that distinguished much of the work of the destroyers, the high standard of seamanship revealed in the good order maintained by ships manœuvring at high speed under most difficult conditions—these are some of the features of the battle with which future generations should be well acquainted, and which, they should reflect, were the products of years of hard work and high endeavour in peace time. They should, also, see in them that same fighting spirit which, time after time, has saved this country from disaster.

Almost every operation of war, almost every battle, could be examined in this same light, but the above examples will suffice to illustrate the argument. Let it be repeated, this is no plea to gloss over mistakes and to approach history wearing blinkers to keep out of sight anything savouring of failure. Such a plea would be ridiculous. It is from the mistakes of others that so much can be learnt. If the reason for and results of a strategical or tactical mistake are explained and understood, the student may one day avoid making the same mistake. But, on the other hand, if it is always the mistakes that are thrown into high relief, if those things which were well done are left in the shadows, if audacity, fine leadership and courageous decision are ignored, then generations of ' grasshoppers ' will arise who will be well acquainted with the follies of their predecessors but who will have nought to inspire them when their own day comes. Not having been brought up in an atmosphere of great traditions, they are unlikely to be moved to great exploits.

ENGINEER INTELLIGENCE

By Lieutenant-Colonel M. Everett, D.S.O., R.E., *p.s.c.*

ENGINEERING is not a mystery with which the rest of the Army has no concern, as some non-Engineers think; nor is it an end in itself, as some Engineers think. It is one of the weapons in the hands of a commander which will enable him to defeat an enemy and therefore it is essential that he should know what that weapon can do and to what extent he can rely upon it. Before it is possible to answer these questions in a particular set of circumstances, both the commander and his Engineer adviser require certain information. The commander must be informed on such matters as the state of the roads ahead, how long a damaged bridge will take to repair, whether water will be available for the troops and so forth, because these are matters which will affect his mobility. The Engineer requires similar information in order to assist his commander in maintaining his mobility.

But Engineers cannot obtain all this information for themselves; they need assistance, and if they are to apply their services in the best interests of the Army as a whole, every soldier must help them.

Now according to Field Service Regulations, Vol. II, Sec. 14, engineer work consists of:—

(*a*) Field Engineering;
(*b*) Works Services.

As it is the collection of information for the former task that primarily affects the other arms, the latter need not now be considered. Again, in Engineer Training, Vol. II, Sec. 33, these two main headings are very fully expanded, and it is proposed to deal with engineer work in the forward areas only.

The Engineer's role in war.—The Engineer's main role in war is to improve the freedom of movement of his own side, and to decrease that of the enemy. He facilitates the movement of his own side directly by building or improving roads, bridges and railways, and indirectly by providing the water and shelter which will maintain the troops fit to fight and march. He hampers the enemy by destroying roads, bridges, railways, water supply and shelter, and also to some extent by the construction of defences. Let us develop these duties a little further.

Engineer duties in war.[1]—(1) Communications: these consist mainly of roads, bridges and railways, which may exist but require improvement; or they may be entirely non-existent.

(2) Water supply: this, even if it exists as it should in a civilized town, may require adaptation to military needs. In war, water supply usually consists in developing streams or wells, and sometimes even in digging for water. Water may also be available but undrinkable: an important duty is then to make such storage or other arrangements that it can be purified.

(3) Provision of accommodation: in the forward areas this may range from the provision of a sheet of corrugated iron, under which a sentry can keep more or less dry, to the construction of a hutted camp for reinforcements at corps headquarters. Naturally, the more mobile the warfare the less call there is for accommodation.

(4) Demolitions: these are designed to hamper the enemy's freedom of movement, and may range from the hasty demolition of a bridge to the preparation of an artificial wilderness several miles wide: the German retirement in 1917 is an example of the latter.

(5) Defences: although all arms are responsible for their own works of defence,[2] Engineers, being more highly trained than other arms in the preparation of defensive positions, will often be correctly employed in assisting the other arms by advice and reconnaissance. They are also responsible for the provision of materials.

What the Engineer needs to know.—In order to carry out any of the above duties the Engineer must know:—

(*a*) What already exists: is there a bridge; will it carry 6-in. howitzers; is there any water; and so forth.
(*b*) What materials are obtainable.

Materials.—The question of materials continually crops up. Engineer units in India carry none except a little gun-cotton; in fact they carry only arms, tools, and some water supply equipment. At home they carry some materials, though not proportionately many more since they also carry a small quantity of light bridging material. Speaking generally, however, all material has either to be brought up from the rear or collected locally; in any case the Engineer can do very little without materials. In Mesopotamia in 1916 an order was to be issued to the effect that supplies of sandbags would be sent up from the base but that all other engineering materials must be extemporised. Had

[1] These are given in the order of their importance as outlined in E.T., Vol. II, Sec. 33.
[2] This is clearly set out in F.S.R., Vol. II, Sec. 4 (2).

this order not been modified, the Engineers would have been able to offer the Army no more help, since the only materials available in bulk locally at that time were wet mud and occasionally dry mud. So we will emphasize the fact that Engineers can do next to nothing without materials, a fact often forgotten on the outbreak of war. Just as the Artillery cannot function efficiently unless supplied with ammunition, so Engineers cannot function efficiently unless in possession of materials. Moreover, the Engineers' "ammunition" has often to be collected at the cost of much time.

How the Engineer gets his information.—The nature of the information required by the Engineer has been placed in two categories: firstly the existing state of affairs; secondly the materials obtainable. Much of this information he will collect himself by means of Engineer reconnaissance.[1] As this is a very important item, it is worth considering in detail.

When a force is advancing it is imperative for the commander to know the state of the communications on his front. He therefore orders an Engineer reconnaissance party to be sent out. This party acts as the commander's engineering eyes, and reports to him *direct*. To perform this duty it moves as far forward as a sense of self-preservation will permit, normally with mounted troops of the advanced guard. It will then send back reports divided into a general Part I and a detailed Part II, these reports being shown to the vanguard and advanced guard commanders on their way to the commander of the force, who will probably read Part I and pass Part II on to his C.R.E. The latter must, of course, ensure that he sees everything that is reported.

To give a detailed instance of the procedure: a normal party for a division advancing on one road in India might consist of two British officers, each with a horse-holder; one British N.C.O. on a motor cycle; one driver N.C.O. on a horse; two Indian officers with four N.C.O.s on bicycles. We will assume that the force is approaching a river which is to be crossed. The British officers will first reconnoitre the whole of the river on the front of the force and select likely places for bridges: the Indian officers will take details of these likely places, width of the river and so forth; while the British N.C.O. and the driver N.C.O. will form a little report centre to take back the report, in duplicate, for safety's sake.

The Engineer, however, cannot rely entirely on special reconnaissance parties. He will also collect much information by keeping his eyes open, and by training his men to do so, whenever he or they move

[1] In E.T., Vol. II, Sec. 59 (3) may be found full details as to how a Royal Engineer reconnaissance party works.

about upon similar occasions. But sappers are few, and do not as a rule lead forlorn hopes: that is the task of infantry, tanks and cavalry. So the Engineers very often are not the first on the scene: yet they need the information at the earliest possible moment. It follows then that to a considerable extent the Engineer has to rely on others, and mainly on the cavalry and infantry, for the required information.

How engineer information should be sent in.—It must first be remembered that all information is of value. Some must concern the General Staff and will be collated under their direction. Some will be more technical and can be collated by the more technical arms. For instance, the existence of a quarry is not only of value as a possible defensive locality; it may prove of the highest importance to a commander if it will enable his Engineers to provide him a metalled road for his mechanical transport.

Secondly, reports to be of value must normally be divided into two parts, a general Part I and a detailed Part II, so as to enable the commander to get the gist of it quickly. The rules given in F.S.R., Vol. II, Sec. 138, hold good regarding reports on matters of engineering interest. Reliability must be stated; did the writer see the quarry or only hear of its existence? Negative information is most valuable; for instance, such a report as "there is no stone, nothing but sand." Reports are useless unless received in time; it is too late to allow a division to arrive at a spot before reporting that it possesses only one small well. Finally, sketches and tables make easier and quicker reading than long verbose paragraphs; a very rough dimensional sketch of a bridge may win a crossing, whereas a description with no details will certainly cause a loss of temper.

There is nothing mysterious about a report giving engineer information; the non-technical officer is not expected to calculate what a timber bridge will carry. Give the Engineer the dimensions, and he will soon solve the problem.

Details of information required.—The various items of information of value to the Engineers are the following:—[1]

(*a*) Road reconnaissance: it is a regrettable fact that one of the most important points is not touched upon in F.S.R., namely information to answer that essential question "can the road be improved and kept in repair?" There is no allusion to repair material, although the existence of quarries or collections of road metal can be discovered either by observation or by a few local enquiries. A river-bed full of boulders, even the existence of rushes, or of ironmongers' shops with wire netting in stock, would help an Engineer to decide whether he

[1] For the reconnaissance of roads and rivers, see F.S.R., Vol. II, App. II.

could inform his commander that a certain road can be used and kept open or otherwise. Another point, which is also omitted, may prove of importance in countries like Afghanistan: this is "is the road liable to interruption by floods?" This again, as a rule, is a matter of observation. In many parts of Asia, instead of a bridge, there may be found what is known as an "Irish" bridge, so called because the water, instead of flowing under, flows over it; at the spot where the road crosses a river bed it is paved to prevent the water from damaging it. Irish bridges are frequent in countries where the river beds only carry water after rain. Consequently, a river bed, though normally dry, may become a raging torrent for several hours or days after heavy rain. The information that a road is subject to such interruption may prevent a disaster. If no information is available on this point from natives, a little observation may supply the answer: if the bed is much cut about, it is probable that it carries occasional violent floods. No road taken over an Irish bridge can, as a rule, be considered safe for regular traffic in the rainy season.

(*b*) Bridges: information dealing with bridges concerns either existing bridges, or suitable sites for new bridges.

As regards existing bridges, the important question is "what load can they carry?" In a civilized country this is usually self-evident. If the road is metalled its bridges can carry steam rollers; if they can do that they can carry any military load with which the forward troops are concerned. In undeveloped countries it is a different matter. In tropical countries, for instance, will be found bamboo and timber bridges, and the calculation of what loads they can carry is often guesswork, since this depends not only on the size of the timbers, but on their condition and strength. If, however, the intelligence officer sends in a fully dimensioned sketch with a note such as "the timbers appear to be of very poor quality," the Engineers may hazard an estimate as to what vehicles can be sent down that road.[1] Again, it may be of importance to know whether a narrow light bridge can carry pack animals or only men in single file. This can generally be discovered by enquiry or by observation: are there any droppings on the bridge?

Then as regards suitable sites for new bridges,[2] it must be remembered that before a bridge can be built the Engineers must as a rule

[1] A classification of military bridges is given in the Manual of Field Works (All Arms), p. 107; the two which affect forward troops are Light Bridges and Medium Bridges.

[2] A number of headings are given in F.S.R., Vol. II, App. II. One rather curious one is "Approximate strength of current." What does this mean? Should the correct answer be given in foot-tons or horse-power? What is wanted is the surface speed of the water.

be on both banks, and therefore that the availability of boats must be stated. If such do not exist, the Intelligence Officer should see if material is forthcoming out of which rafts can be built: logs or petrol tins for example.[1]

(*c*) Then there is the matter of railways. It may be thought that railway information will not often be wanted in a hurry, and that the Engineer can be left to provide it himself. That is not so. For instance, when Baghdad was captured the infantry had occupied the railway station some time before any Engineers arrived, and information as to the existence of locomotives and trucks which could be used for an immediate pursuit towards Samara was urgently needed by the Commander-in-Chief.

It is a fair assumption that damage done to rolling stock can be noticed by the layman; if no damage is obvious then it is probable that some engines and rolling stock will move. What points then should be looked for?

(i) The number of lines, including sidings.
(ii) The gauge: measured from inside to inside of the rails.
(iii) Rolling stock: the number of locomotives and trucks, and what the latter will carry.
(iv) Fuel stocks available.
(v) Water supply for locomotives.
(vi) Repair yards and materials: heaps of rails, sleepers, ballast, etc.
(vii) Control: whether the signals, telegraphs, etc., are damaged.
(viii) Whether bridges are intact.

In the case of light railways, to be found in localities such as mining areas, much the same points should be looked for.

(*d*) Next, water supply. The important point is "what water exists?" In a town, where water is laid on, it is necessary to find the pumping station which is the main source of supply and to verify its condition. In the field, however, a force will normally have to water from streams or from wells.

If the supply originates from one or more streams, it is necessary to ascertain how much water is coming down the stream. It has also to be remembered that quite a small stream will water a very large force: if that stream is imagined to be in a pipe a truer picture will

[1] In the case of assault bridges, it is laid down in I.T., Vol. II, Sec. 60 (3), that the detailed reconnaissance is a matter for infantry and not an engineering problem The necessary details are given in Sec. 61; here again mention is made of the mysterious "strength of current."

be obtained: even a small stream means a very big pipe. Taking a force of 20,000 men and 8,000 animals, the water required comes to about 180,000 gallons a day, while a small stream, say four feet wide and a foot deep in the middle, flowing at a couple of miles an hour, will give about 130,000 gallons an hour. If there is any doubt as to its quantity, then the width, depth, and mean speed of the water must be measured: this last may be taken as four-fifth of the surface speed. In every case the Engineers must know what the banks are like; whether they are high or low, steep or sloping, hard or soft, while the administrative staff will want to know what the approaches are like, so that traffic may be organized.

If the supply is from wells only, then it is much harder to ascertain the obtainable quantity. The best that can be done will probably be to give:—

(1) diameter of well;
(2) depth to surface of water;
(3) depth of water;
(4) whether well is lined;
(5) what the coping is like;
(6) whether any method of raising water exists;
(7) nature of approaches and surroundings.

Whether the supply is from streams or wells it is possible that pumps and reservoirs may exist. Even a layman may often ascertain the type of pump and its capacity.[1] The size of the pipes leading to and from the pump may alone enable the Engineer to gauge its capacity

The size and condition of reservoirs must, of course, be reported, but their location is often of even greater importance. A reservoir on the top of a hill may be far more valuable than one on a lower site; on the other hand, it may be possible to fill a low reservoir but not a high one. Pipe-lines may be found leading from a lake to a distant town; in such a case the diameter and length of the pipes should be noted.

Divisional Engineers carry a good deal of water equipment—enough to water a division in a couple of hours. In India they carry in each of the four engineer units a portable pumping engine, a deep well pump and a number of hand pumps, together with canvas tanks and troughs. On receipt of information as to the presence of water in sufficient quantity at any point, they can proceed straight to the spot and greatly expedite the supply of the division.

[1] Such details may be found fixed on the pump itself.

(*e*) In a retirement, when demolitions are to be carried out, full information regarding bridges is required. In addition, it may be possible to crater or block roads and information from other arms as to suitable points will save much time. It is no good making a crater if the enemy can drive round it.

(*f*) As regards defences, the necessary engineer intelligence turns chiefly on the question of what materials are available. Troops holding a position will probably want barbed wire, possibly duck boards, splinter-proof observation posts and loopholes. The Engineer's task is to collect the necessary materials, consequently he requires to be told of the existence of barbed wire round adjacent fields or of nearby corrugated iron buildings; for such knowledge may save much valuable time and transport.

(*g*) Finally, as regards accommodation and materials generally. Intelligence Officers who look out not only for hostile activity but also for stocks of materials and so discover such places as builders' yards, saw-yards, ironmongers' shops or power stations, are doing excellent service.

Conclusions.—There are two main points to remember:—

Engineer intelligence is only part of the intelligence which a commander requires to make his plan and to carry it out. If he does not receive this particular kind of intelligence, one of his weapons is crippled.

Engineer intelligence must provide answers to these two questions:—

What is the present state of affairs?

What materials can be found?

FOOD SUPPLY AND MOBILITY IN THE NAVY

By Paymaster Captain H. P. Murray, D.S.O., R.N.

BEFORE the advent of steam, the mobility of ships was governed principally by the question of supplies, which included food and water. In normal circumstances even water was not so vitally important as food, as much could be done, when necessary, to limit the amount used, and it might be possible to catch rain; moreover, water could be embarked from many places from which food could not be obtained in sufficient quantities. Early ships proceeding on long voyages carried huge supplies of salt meat and sometimes live stock, and fish could be caught at times. In fact, apart from damage affecting seaworthiness, their radius of action was governed by the supply of food.

The disappearance of sails introduced a new factor which considerably reduced radius of action. Fuel could not be carried in unlimited quantities, nor could it be obtained at all ports, and as ships could, so far as their stocks of food were concerned, travel much further than the coal carried would take them, radius of action and mobility were controlled by the fuel capacity. Thus, if we ignore ammunition supply, fuel has controlled the mobility of men-of-war from the time of the disappearance of sails until the present date. But two considerations have arisen which may affect this in future and, perhaps, again bring food to the front as the governing factor in the mobility of the Navy.

Firstly, the introduction of oil fuel has greatly increased the mobility of ships, as not only can they steam far greater distances now than they could with an equal weight of coal, but oiling at sea can be carried out without difficulty, whereas coaling at sea was never a really practical proposition.

Again, the improvement in messing the ships' companies necessitates the Paymaster carrying a much greater variety of articles of food than used to be the case. Many of these require cold storage for their preservation. Thus, if the standard of messing is to be maintained over a long cruise, the mobility of ships will be affected, as the storage capacity of ships for the additional articles of food required is limited.

It is, perhaps, early yet to say that food supply may once more control the mobility of ships, but it must be remembered that in war-time it will probably be considered essential to maintain as far as possible the standard of living to which the men have become accustomed. Before what is called General Messing was introducted into the Navy—and it is now rapidly becoming universal—the method of feeding the men was that the Paymaster supplied what is known as the "standard ration." This was an arbitrary amount of food; meat, potatoes, fresh vegetables when procurable, bread or biscuit, tea, cocoa, etc. Over and above this ration a money allowance was credited to the men, out of which they could purchase additional food either from the Paymaster or the canteen. The canteen stocked articles of food, not carried by the Paymaster, which enabled the men to vary their diet, and opportunities were given, as far as possible, to canteen tenants to replenish their stock; but in normal circumstances such opportunities were not a governing factor in a Flag Officer's arrangements for a cruise, nor did he worry much about obtaining fresh meat, so long as it was forthcoming at fairly regular intervals. It was always possible to fall back upon the large stocks of salt beef and salt pork and biscuit carried. Food suitable for officers' messes was usually forthcoming at even the smallest ports visited, and such cold storage as might be available was usually occupied by the stocks of those messes and of the Admiral and Captain.

At the present time it is essential in ships which are under the General Messing system for the Paymaster to embark large stocks of such articles as bacon, liver, fish, margarine, etc., in order to maintain the General Messing standard, and most of the articles need cold storage, or at least require keeping in a cool chamber. Furthermore, frozen, instead of fresh, meat is now universally supplied to the men, and this again necessitates cold storage when embarked in quantities to last the ship more than four to five days.

It will be seen, therefore, that, whilst it was formerly the men's business to vary their diet as they wished, this is now done for them by the Paymaster, and it is therefore essential that this officer should have the necessary facilities for replenishing his stock at suitable ports, and also accommodation for maintaining it either in cold storage or a cool chamber. Tinned meat and biscuit are of course carried as emergency rations, in the event of the supply of frozen meat or flour failing, but the General Messing system would break down completely if it was tied for any length of time to tinned foods, although satisfactory arrangements could be made to maintain it for a short period. The salt beef and salt pork ration has ceased to exist, and biscuit is only carried in small quantities.

The present writer is of opinion that the possibility of the mobility of the Navy being affected by the improvements in the messing of the men may not be fully realised because Admirals and their staffs have grown so accustomed to measure the radius of action of their ships by fuel alone. It appears improbable, too, that the significance of the withdrawal of such valuable rations as salt beef and salt pork—necessary though it was—has been fully appreciated from the point of view of the mobility of the ships.

In effect, it would seem that, unless the radius of action of modern ships is to be curtailed by food supply, greater provision will have to be made in future construction for cold and cool storage.

INFANTRY REORGANIZATION

A REPLY TO "A REGIMENTAL OFFICER"

By MAJOR R. F. W. ASHWORTH.

ALTHOUGH the reply of "A Regimental Officer" to my proposals for infantry re-organization[1] is scathing, his courtesy and evident anxiety for the good of the Service are equally noticeable. However, even if my original proposals, as suggested, have been received by most infantry officers with derision, the would-be reformer can console himself by reflecting that it is not the first time that new ideas have been derided in the Army. It is all the more surprising, therefore, having regard to the burning enthusiasm of "A Regimental Officer" for "things as they are," that he should suggest, tentatively it is true, a grouping of existing regiments in administrative "brigades" as a remedy for evils that he freely admits. This scheme has the fatal defect that *esprit de corps* would be damaged beyond remedy by the recurring transfer of men from one regiment to another. "A Regimental Officer" himself points out how necessary it is to foster pride of regiment, and it is certain that it would break the hearts of regimental officers to work under such conditions. The case of cavalry, in which it is the regular system of supplying regiments abroad, is different. My critic shows, and one ventures to agree with him, that the infantry has its own psychology which must be understood and encouraged, not violated. It is strange that it should fall to me to point this out, and it is to be feared that in making his suggestion "A Regimental Officer" stands a good chance of finding himself in the pillory beside me.

There are also other objections. While the composition of some such brigades readily occurs to one, the plan could not be carried out throughout the infantry without absurdities and that violation of tradition which is so strongly deprecated. Thus, supposing a Fusilier "Brigade" included the Royal Scots Fusiliers and the Welch Fusiliers, how would it be possible to transfer men from one to the other? It would be the

[1] *Vide* the JOURNAL of May, 1932, p. 364.

same with the Scottish Rifles and Ulster Rifles. Such transfers would also cause extra expense in uniforms and otherwise. Finally, how could the territorial system or spirit survive if, say, London should be called upon to find a job in Northumberland for a man who at one time had been transferred from the Northumberland Fusiliers to the Royal Fusiliers?

In writing the original article it was felt that the process of re-organization must inevitably involve *at the outset* the greatest violence to regimental feeling, and that was why certain combinations were put forward in order to demonstrate the possibly brutal necessities and implications of reform. For instance, the amalgamation of the 60th with the Manchester Regiment might be necessitated by considerations of man-supply. The suggested association of the Oxfordshire and Buckinghamshire Light Infantry with the Bedfordshire and Hertfordshire Regiment was based on territorial reasons. One knows, of course, that the Bedfordshire never enjoyed the same opportunities of gaining glory as the Light Infantry, while the classification of "heavy" or otherwise is now picturesque rather than material. However, only the War Office possesses the knowledge necessary to draw up a scheme to meet the hard administrative exigencies of recruiting. Frankly, it was felt that if the infantry must unavoidably be put through the administrative mincing machine, the only justification for doing so must be that it would serve national interests in the improvement of organization and give infantrymen generally some better scope for their enthusiasm. Instead of every home battalion being a glorified depot, there would, under the proposal, be real depot battalions and real service battalions.

In the endeavour, therefore, to correct the defects in the present system, as enumerated by "A Regimental Officer,"[1] some of which should be a matter of national concern, it seems necessary to see whether any modification of the original scheme can make it more acceptable from the administrative point of view. The other objections to change can then be dealt with.

If it be supposed for the moment that four-battalion regiments could not by setting up one permanent battalion at home supply three battalions abroad, it may freely be admitted that five-battalion regiments would be better, but as this means splitting a certain number of existing regiments, the alternative of six-battalion regiments may be considered. The following arrangement of such would give the requisite number of battalions abroad:—

[1] *Vide* the JOURNAL of August, 1932, p. 567.

" A " Group : 18 regiments each having
2 battalions in India (permanently) ;
1 battalion in the Colonies ;
2 battalions at training centres ;
1 battalion at regimental centre (medium establishment).

" B " Group : 2 regiments each having
3 battalions in India (2 permanently) ;
1 battalion in the Colonies ;
2 battalions at regimental centres (high establishment).

" C " Group : 1 regiment having
3 battalions in India (2 permanently) ;
1 battalion at training centre ;
2 battalions at regimental centres (low establishment).

The above gives 37 battalions at training centres of which 18 of " A " Group and one of " C " Group might be on a higher establishment, say 850 men, enabling battalions 800 strong to be sent anywhere at short notice. The remaining 18 service battalions could do with an establishment of 800, subject to such shortage as the exigencies of recruiting might necessitate. A working strength of 750 men would make them very useful. It will be seen that " A " Group presents ideal conditions, while the others must each have two " centre " battalions.

If regiments had six battalions, the permanent centre battalion might well be commanded by a substantive colonel, these being selected from the other battalion commanders and given a new term of command. This would enable regimental administration to be placed in their hands and keep in harness many valuable officers—potential war brigadiers. A new regimental spirit might arise out of the co-operation of such officers with the present full colonels of regiments who would have to be called colonels-in-chief.

On the other hand, this scheme has the defect that in lumping together in each case three of the existing regiments the territorial spirit, which one fully appreciates and of which more anon, would be more greatly damaged than by the original proposals. Six-battalion regiments might fail to retain the clannish feeling of regimental comradeship and pride that was so marked a feature of the 60th and the Rifle Brigade when those, then, four-battalion regiments were a soldier's ideal.

One would therefore rather examine the objections to the original proposal of four-battalion regiments to see whether the administrative objections raised really make them " impracticable." The first objection is that a four-battalion regiment could not, by means of one battalion at

home, supply two battalions in India and one in the Colonies unless the supplying battalion had an establishment of "at least 1,500." One cannot agree with "A Regimental Officer's" mathematics. If two battalions in India require 360 men yearly—200 each being admitted to be rather excessive—and the battalion in the Colonies only one lot of up to 400 during its colonial tour, it would appear that it could easily be managed by a depot battalion with an establishment of 900, because :—

(*a*) The battalion in the Colonies would, under the original proposals, require no drafts for the first three or four years, and there would at the outset be the great help of the large number of men that would be available for abroad upon the transfer of the regiment from "B" Group to "A" Group.

(*b*) The suggested modification of Indian requirements is indispensable. "A Regimental Officer" waves this aside as a medical question and wipes it out. It is, of course, a medical question, but the layman cannot see that it can be very terrible for young men to summer in the Indian hills. Time was when every soldier in India was made to wear a thick flannel cholera belt. That was also a medical question, but on the matter being put to the medical authorities—incidentally at the instance of the present writer—cholera belts were abolished out of hand. The weak spot in the original suggestion is that it concerned only men for battalions located in the hills in summer. As one of the two battalions of a regiment in "A" Group would certainly be in a good station—hills, Quetta, Poona, etc.—it could be arranged to send all drafts to the former and from it post seasoned men to the battalion at such places as Madras. Thus the 19½ years of age and nine months' service rule could be made universal.

(*c*) It was proposed that centre battalions in "A" Group should not take recruits under 18½ years of age. This would involve service of not more than nine to fifteen months (according to age on joining and to how eligibility for abroad fitted in with the trooping season) at the centre battalion against, up to two years and five months at home at present. "Regimental Officer" objects that the age limit cannot be raised without diminishing the present inadequate supply of recruits. The average age on enlistment is probably 18½, but it is admittedly important that none who wish to join the infantry should be lost to it. That the establishment should already be short by 10 per cent. raises a big question of full ranks or fewer units. Allowing full force to the war advantage of numerous cadres, shortage of establishment should not be tolerated if it impairs peace training or regimental effectiveness. The present writer lately sought to advocate the restoration of full dress, still smarter than before, even if temporary reductions of establishments had to be made

as a preliminary to meet the initial cost. How can it be supposed that young men can be attracted by the prospect of living their whole Army lives in dismal khaki?

Actually, the practicability of the proposals needs examination by the War Office after the foregoing points are cleared up. The question is too abstruse to be settled by debate. One does, however, strongly protest against "A Regimental Officer's" method of waving aside the necessary preliminary measures and then pronouncing the whole thing to be impracticable.

He raises the further objection[1] that to allow many extensions of service would impair the Army Reserve. Only short extensions were contemplated such as have often been allowed in the past when such premature transfers to the Reserve have been allowed as the need of elasticity suggested. Again, one imagined it to be common knowledge that a soldier serving beyond the seas may be, and is, kept with the colours so long as transport exigencies permit of his transfer to the Reserve within an additional year. The situation contemplated is that of a boy joining at 18 who is sent to the Colonies six months later. He serves abroad for seven years and reaches the Reserve before his eight years are completed.

"A Regimental Officer" is also quite unconvincing when he comments on the early publication of reliefs. Everything in the Army, and at sea, depends on circumstances, and one knows nothing of the suggested complications affecting contractors. It hurts nobody to know that a battalion is down for India two years ahead. Mentioning *stations* certainly causes trouble, such as when officers take houses and find subsequently that they have backed the wrong horse.

Neither need the centre battalions be of varying or abnormal strength, so that the "blocks and rushes" in promotion should not occur. The home battalions should be worked together above, say, the rank of corporal, thus removing the old bitter complaint of older N.C.Os. being superseded by boy sergeants posted from the depot.

Lastly, the mobilization stores of a regiment would, of course, remain in charge of the centre battalion.

That leaves the very important sentimental side of the question to be discussed. The writer has been associated in matters of duty with, he believes, every line regiment but one. He has served with all three arms and for a short time was second-in-command of a battalion. He thus may claim understanding of, and deep sympathy with, regimental feelings. The devotion of officers to their regiments always seemed to

[1] See second paragraph, p. 561, in the same article.

him to be marvellous and almost pathetic, and he particularly remembers the fine regimental pride and old-fashioned courtesy shown by certain regiments towards a very humble member of the Army. "A Regimental Officer" must not, therefore, suppose the present writer to be ignorant of regimental history and all that has been built up round it. Unfortunately, however, armies are kept for reasons other than to perpetuate unaltered the titles and form in which their constituent units have won renown. I repeat "titles matter but little; what matters is the organization." By this is meant that if the organization is such as to encourage the pursuit of efficiency, the title will soon be adorned by new pride in duty well done. "A Regimental Officer" speaks first of the sanctity of the old numbers and then of the pride of the present names. He cannot have it both ways. He mentions the Devons and, concerning another regiment of course, "Neither King's, nor Queen's, nor Royal Marines but 28th Old Bragg's," but one remembers that the Devons gained their fame as the 11th, and still call themselves "The Duke of Beaufort's Musketeers, the Salamanca Heroes, or the Bloody 11th." Mere change in name or organization cannot blot out a wonderful past so long as continuity of existence and of tradition is preserved.

Are not regiments even more proud, if anything, of the "deeds they did that day" when under titles differing from those they now bear? How, then, can changes of titles hurt? All human institutions that derive their strength from ideals are, of course, intensely conservative. Conservatism is good, but the day comes when perhaps through some urge for reform, or by bringing ideals in line with the needs of the day, changes become inevitable. In the Army, the advance of science compels the acceptance of new weapons and of changes in organization. Is there to be no advance in the science of administration? "A Regimental Officer" speaks of the Army being an imperial police force. How unhappy to stress its role when it has not a single policeman at headquarters in a reasonable state of readiness to put down any disturbance that may occur.

As regards larger regiments tending to equalise promotion, it is evident that they must do so in greater or less degree. It is not a matter of national importance. The slowness of promotion in two of the pre-War four-battalion regiments may have been due to reaction following expansion and quick promotion. All cannot expect "ten deaths a day." Extra-regimental promotion, at any rate in the cavalry, has nearly always occurred to check undue quickness of promotion without particular compliment to the instrument of correction.

As regards the territorial connexion, one agrees that it is most valuable, but that is no reason why Devonshire should not rally round

the 11th as much as it now does round the Devonshire Regiment. But local associations need not be on a county basis. "A Regimental Officer" invokes Worcester schoolboys and Gheluvelt, yet it may be asserted that fourteen miles away from Worcester there was little if any evidence of the activity of that local association. However, the infantry spirit was strong, as in the woman who referred to the lances of hussars doing a musical ride as their "fixed bayonets." The "good citizens of Canterbury" may know all about the Buffs, but one may hazard that they know a fair bit also about the twenty-eight cavalry regiments whose depot used to be there.

"A Regimental Officer" asks, *à propos* of the suggested forced unions, what the "3rd Queen's Own Buffs" would do as between the velvet facings of the 50th and the buff of the old 3rd. One would say adopt buff as in the regiment's proposed title. The real difficulty, however, is that hitherto Royal regiments in scarlet have worn blue facings. Some distinctions in the way of uniforms may not, however, have originated as battle honours. For instance, the 11th Hussars were given their crimson breeches for acting as escort to the Prince Consort. On the other hand, his remarks on infantry psychology are very instructive and interesting. One ventures to suggest that whatever pride may sustain other arms, the infantry soldier should be inspired by the feeling that he is the backbone of the whole Service. *Ut veniant omnes* should be his motto: he can hold his own alone much more effectively than they can hold theirs.

Putting the whole thing in a nutshell, if the feeling in the infantry is that it does not mind changes so long as there are no changes, it is evident that matters cannot advance. But one has faith. The regiments at Fontenoy had no great traditions nor the Mounted Infantry, as such, in South Africa. The Royal Tank Corps, the Royal Flying Corps and the Minesweepers had no traditions to sustain them during the Great War. The wonder of the present discussion is that the infantry officer of to-day venerates his predecessors but does not realise that he himself is better instructed, more enthusiastic and can achieve more than they all. Reform may have its disagreeable side, but regimental patriotism "is not enough." All must be ready to yield whatever may be necessary in the way of organization or otherwise in the interests of the country.

At the risk of piling the Pelion of aggravation upon the Ossa of one's enormities, one would now make the suggestion that all the infantry, if reorganized, should, except such as are specially called Fusiliers or the like, be called Rifles, and that all infantry privates, even Highlanders, be called Rifleman or Marksman provided, as regards the latter, that the man were qualified as such. The disadvantage of the latter title is that

it would be hard to remember at a given moment which was actually held. However, the marksman's badge might be worn on the upper arm, hitherto sacred to badges of rank, and so be more readily seen.

Finally, going back to the alleged danger of changing titles, one would ask what two occupations could be named so essentially humble as those denoted by cowboy or kitchener? The glamour of daring and adventure in the former case and the great fame of Lord Kitchener in the latter have entirely obliterated in the mind the intrinsic significance of the words. Whatever the British infantry may be called it will still be respected and regarded as the backbone of our land forces.

THE ROLE OF NAVAL AIRSHIPS

By LIEUTENANT-COMMANDER T. G. W. SETTLE, U.S. Navy.

(*Reproduced from the United States Naval Institute Proceedings*).

VERY inadequate consideration, it is believed, has up to date been given to the building up of a doctrine for the effective utilization of naval airships. One reason for this apparent apathy has, of course, been the lack of vessels of this type to operate with the fleet and thereby assist in building up such a doctrine. Many officers have erroneous ideas about airships and their war use, and more particularly their specific strategical and tactical missions.

Now, however, the U.S.S. " Akron," the newly commissioned airship scout cruiser, is available for fleet work, and it is highly desirable that an airship doctrine should be worked up without delay. Such an airship doctrine should be originated, it would seem, jointly by the staff of the Naval War College and the airship officers; it should be a specific written doctrine, covering the major and secondary strategical and tactical missions of airships, in the light of accumulated experience and the present state of the art. The initial purpose of such a doctrine, and a reason for working it up with minimum delay, would be to crystallize naval opinion as to the role of airships. The original, or Mark I, doctrine would be a first approximation and would be modified from time to time as the lessons to be learnt from the "Akron's" operations can be assimilated.

With the idea of starting discussion and, perhaps, healthy controversy the writer proposes to enumerate briefly some of the considerations bearing on this matter, and to submit in outline form his idea of what the airship doctrine should be. This proposed doctrine, as well as all other opinions expressed herein, are those of the writer personally, and it should be realized at the outset that many of them may not find general agreement in the service, or even among airship officers.

When dealing with this subject, it is necessary to consider it under two general headings, viz. :—

ZN—Non-rigid (or pressure) airships—blimps.

ZRS—Rigid (Zeppelin) airships—scouting vessels.

Hereinafter, the term " blimp " will be used to denote the non-rigid or pressure type, and " airship " to denote the large rigid (Zeppelin) type.

BLIMPS.

This class properly includes both the conventional fabric-hull vessel and the metallic hull-and-plated pressure vessel of the ZMC-2 type, of which only one ship has thus far been built.[1]

Blimps were used very effectively by the major Powers in the war of 1914-18. No convoy escorted by a blimp was attacked by a submarine. Records show that Allied blimps cruised approximately 89,000 ship-hours and about 2,250,000 nautical miles. In late years we have made use of this class in only one of its categories of usefulness, namely, training of personnel. It is strongly believed that we should develop and utilize it far more extensively than at present, in order to take full advantage of its possibilities.

The blimp's useful employment may be divided into three categories, namely: (*a*) training of personnel; (*b*) research, test and development, general utility, mapping, photography; (*c*) strategical and tactical employment. Category (*a*) may be sub-divided into "training of personnel for ZRS duty" and "training of personnel for blimp duty." It is strongly believed that adequate training in blimps is essential and indispensable in producing watch officers for large airships.

Not only is primary training necessary, but continuing familiarization training of ZRS officers in blimps (except for commanding and executive officers) is necessary if we are to have officers with some ship-handling ability in the chain of command. Enlisted men of the crews of ZRSs should also have had a few hours in blimps before they receive the designation "qualified for airship duty"; more particularly, enlisted men in training for the elevator watch list of a ZRS should have adequate primary time in blimps. It is believed that lack of blimp training was a fatal flaw in recent British airship policy. It is also just as much of an error in German policy, but is, in this latter case, largely counteracted by certain other considerations. Personnel must, of course, be trained for blimp duty. This training should be more comprehensive and extensive than in the case of ZRS crews. When more blimps become available the present course and syllabus at Lakehurst may advantageously be expanded to provide more fully for the necessary training in these airships.

Under category (*b*), blimps can be utilized in a great variety of research, test and general utility missions on behalf of lighter-than-air and other branches of the service, very efficiently and economically. The present day blimp itself is susceptible to improvement in performance.

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[1] It is only fair to point out here that the ZMC-2 was not built primarily to compete with conventional blimps, as such, but rather as an experimental ship looking towards later adaptation of metal hull covering to ships of Zeppelin size.

Under category (*c*) the blimp is conceived to be a strictly naval district craft. Her area of operations is the coastal belt extending from the outer limits of territorial waters to a distance of several hundred miles offshore; she is a low-altitude craft, 6,000 feet probably being a normal service maximum altitude. Within her area of operation, she will be valuable strategically as a high-speed scouting and patrol vessel; for convoy escort; for covering mining and mine-sweeping craft, and for dispatch work. Tactically, the blimp must retire or take cover from enemy surface or aeroplane attack; under many conditions, however, the blimp may successfully engage enemy sub-surface craft; and she is particularly well fitted to discover and track submarines. In general, the blimp is believed to be a most valuable coastal type, superior in performance—i.e., speed and range—to most coastal craft, except the seaplane; able to take cover in clouds; particularly suited for night and low visibility operations, negative scouting and anti-submarine patrol.

Secondary and infrequent utilizations of blimps are: assisting in blockade of enemy ports; running own blockaded ports; operating from aeroplane carriers; liaison with army coast defence forces.

Rigid Airships (ZRS).

The "Akron" and "Macon" are designed as scouting vessels. They will combine very high speed—twice that of the fastest surface cruiser—with long range, manœuvrability in three dimensions, good sea-keeping ability and excellent habitability for their crews. Their upkeep, maintenance and operation costs, as well as personnel costs, are small compared to surface cruisers. They will carry more planes than present-day surface cruisers.

Considering their specific primary mission of scouting, their areas of visibility will be greater than those of surface cruisers by a great or small amount depending upon altitude and meteorological factors; therefore, for a certain number of miles steamed, more square miles of surface area will have been observed by the airship. Bringing in the time factor, speed, it is evident that in a given time interval, the ZRS will be able to scout a much greater area than can a surface cruiser. Ship's aeroplanes can, of course, be utilized as extensions to the "eye" of a vessel of either type; but it would seem that the airship can more efficiently and effectively utilize her aeroplanes in this way, because, in the first place, she has more of them, and, in the second place, she can get them back on board without slowing down; furthermore, it is probable that the airship's aeroplanes can be designed with better performance than can those of a surface cruiser.

Another major advantage of the airship over the surface cruiser is her ability to take cover in clouds when the meteorological gods are kind enough to provide them; she can do this without sacrificing speed or endurance (with which handicaps the submarine is taxed when submerged); and the airship's spy basket is a much better "eye" than is the periscope. When submerged in clouds, or concealed above them, the ZRS still has full normal use of her powerful, long-range, intermediate-frequency and high-frequency radio transmitters, an asset which is denied the submerged submarine. Of course, the same applies to the use of radio receivers and direction finders.

The airship's armament will consist primarily of a battery of light rapid-fire guns (.50 m. machine guns), and her mobile, long-range "guns," that is, her complement of aeroplanes. As a secondary item of ordnance, she will probably carry a small quantity of bombs. The shipboard guns will be so disposed as to cover all angles of approach, and furthermore in such a way as to allow the maximum concentration of fire in the directions from which attack is most likely and most dangerous. Naturally the battery is to be considered primarily an anti-aircraft one. The ship's aeroplanes, of course, will carry conventional heavier-than-air types of machine guns, light bombs, and "smoke" apparatus.

As a steady gun platform the ZRS is superior to any other fleet type. In heavy weather the airship has far smaller amplitudes in roll and no greater amplitudes in pitch and yaw than present battleships or carriers. In regard to seaworthiness, or weatherworthiness, the airship's position is very favourable. Being completely and continually submerged in its operating medium, the air, the airship is not subjected to the "wracking" and pounding which the surface vessel suffers in heavy weather at the "surface of discontinuity" between air and water. Often when a "whole gale" is blowing and surface ships are most uncomfortable, the air will be smooth at airship levels, and the ZRS suffers no inconvenience except loss of ground speed if wanting to get to windward. In turbulent air conditions at sea the airship's motion in roll, pitch, and yaw is less than, or comparable to, that of the largest surface vessels in analogous conditions. Furthermore, the airship's high mobility permits her to skirt round extremely foul weather when it may be expedient to do so. Low surface visibility means nothing to the airship so far as control when under way is concerned. On some occasions when sub-surface and surface craft are handicapped by weather conditions, and when surface-based aeroplanes will be weatherbound, the airship will be functioning at or near her full efficiency and may be able to use her aeroplanes effectively.

Now, to argue on the negative side of the question, a few of the general misconceptions relating to airships will be stated and briefly discussed :—

Airships are very vulnerable—easily sunk by aeroplane attack.—This idea is directly traceable to war-time Allied propaganda, wholly justified as a war measure, but unfortunate in its later effect upon airships in this country. A perusal of the records of the German war Zeppelins gives one the very definite conviction that they were far from being unduly vulnerable. A vast preponderance of the German ships were lost because of improper or unwise employment and, directly or indirectly, because of the too-short training periods and inexperience of their crews, in other words poor handling. The number of ships which were lost by enemy action, aeroplane or otherwise, when properly employed and moderately well-handled, was very small indeed; and this in spite of the very small and poor ships which were utilized, judged by modern standards. Nevertheless, German Zeppelins during the war steamed about 3,000,000 miles in about 75,000 ship-hours.

Of course, the aeroplane men will say: "but remember, the aeroplane too, has improved in performance enormously since the war." The present tactical status of airships in direct combative action, as it appears to the writer, is that aeroplane attack in large force, and "pushed home" energetically and efficiently, will undoubtedly quite often sink an airship, especially if a plane "rams," and particularly if the attack is surprise. This is largely analogous to a surface cruiser attacked by a large force of destroyers or torpedo planes. Properly employed, the airship will not usually be subject to enemy aeroplane attack in force. Even if it is attacked in force, the airship will give a good account of herself, and will put a number of enemy aeroplanes out of action. Unless the enemy has great superiority in aeroplanes, and in the unusual event of being afforded an opportunity to attack an airship in force, will he care to risk losing an appreciable number of his aircraft in attacking a Zeppelin prior to a fleet action? Will he not prefer to harass the airship with a few aeroplanes, and let it go at that? If attacked mildly, the airship should have no more difficulty than a surface cruiser would have if attacked by a few destroyers, for she has powerful ordnance; is an excellent gun platform; has high speed and manœuvrability compared to a surface vessel; and her own aeroplanes will undoubtedly be superior in performance to the attacking surface-based aeroplanes; she may also be able to take cover in clouds and darkness.

Properly employed, the airship is subject to attack only by enemy aircraft, while surface or sub-surface craft are subject to attack by enemy air, surface, or sub-surface craft. Even aeroplanes of most types are subject to attack by surface batteries.

It will be as difficult, or more so, to shoot the buoyancy out of an airship as it will a water-sustained craft. Gas comes out of even relatively

large holes in gas cells slowly, and holes can be rapidly and readily closed by the crew. The structure is so redundant, and has such ample factors of safety, that it would take very extensive damage to put the airship out of action. Buoyancy and power plant are sub-divided into multiple units, and controls are duplicated. The use of helium reduces the fire hazard to negligibility.

The problem of bombing an airship will be very difficult for aeroplanes because of her high speed and manœuvrability and the difficulty of knowing the differential altitude. Bombs must land *on* the ship, there being no " mining " effect from landing bombs alongside, as in water craft targets

Airships are only of use for negative scouting.—The writer is strongly of opinion that this is not the case, and that airships are excellent for positive scouting. The airship's high speed and long range as compared to a surface cruiser, and her ability often to take cover in clouds, but without the submarine's attendant necessity to sacrifice speed and communications, make her a valuable positive scouting vessel equal in effectiveness, under many sets of circumstances, to several surface and/or sub-surface scouts. The airship's speed permits her to track any enemy surface craft she may sight, unless beaten off by enemy aeroplane attack in force; a submarine cannot always do this because of low speed.

Airships must attain high altitudes (presumably to avoid surface batteries or aeroplanes) and in so doing lose most of their performance.—It is believed that this is one of the most serious misconceptions with respect to airships with which we have to deal. Its genesis again lies in the war of 1914-18, during which the Germans built many ships specifically for the abortive bombing expeditions to England. Practically every other feature in these ships was sacrificed and " trimmed " to produce a superlight vessel which could attain extreme altitudes on the return voyages. Actually and properly, it is now considered that bombardment of enemy territory is a minor and infrequent mission of airships; in general, surface craft or aeroplanes can do it more effectively and efficiently. Our airships are built as scout cruisers not as " high altitude bombers." If there were any legitimate need for airship bombers it would be a straightforward engineering job to design and build them, as the Germans did, just as it is feasible from an engineering standpoint to design and build submarines capable of operating at extreme, and absurd, depths; of course, the submarine would be so heavy structurally that she would have no buoyancy left for fuel, just as the airship would have no fuel left at extreme altitude. Our airships are essentially and primarily scouting vessels. It is submitted, though many may not agree with the writer on this point, that they are essentially

and primarily low-altitude scouting vessels, in much the same way that our submarines are relatively shallow-submergence vessels. It is submitted that airships in their proper and normal role, do not have occasion to go above 6,000 ft., and probably will seldom do so; further, it would seem that 10,000 to 12,000 ft. will be a maximum emergency altitude, very infrequently attained. It is estimated that 90 per cent. of cruising will be at 3,500 ft. or below.

Airships are vulnerable to shore batteries.—True, but so are all naval craft. Airships are essentially ocean-going vessels, high-seas craft, and have no more reason to be under the guns of shore fortifications, whether coastal or inland, than have any other units of the fleet.

Airships are slow and cumbersome compared with aeroplanes.—True, but there is no justification for comparing airships with aeroplanes, any more than it is justifiable to compare the performance of submarines with those of destroyers, or a surface liner with a racing boat. Rather, they must be contrasted. In considering their proper place in the fleet, airships are to be compared with surface scout cruisers, since the airship's role is essentially that of a scout cruiser. Aeroplanes and airships are mutually complementary not competitive; neither is capable of carrying out the other's mission or missions effectively.

Summary.

To sum up; the airship's attributes which tend to make her a valuable and efficient fleet type are: very high speed—twice that of any other type of vessel, and exceeded only by aeroplanes; long range at high speeds; habitability for the crew—excellent and comparable to latest surface craft; suffers less from stress of weather than certain other types; greater area of surface visibility under given conditions than other types, except aeroplanes; powerful radio equipment; excellent gun platform; carries more aeroplanes than other vessels except carriers, with probably higher-performance planes; armament and ability to withstand "punishment" from enemy attack is comparable in effectiveness to an unarmoured surface cruiser, considering the forms of attack to which each type respectively is exposed; shares with the submarine the advantageous strategical and tactical attribute of ability to render itself invisible (taking cover in or above clouds), under frequent meteorological conditions, without, however, the accompanying handicap of loss of speed and loss of ability to use radio transmitters from which the submarine suffers; the spy basket is a better eye than is the periscope; vulnerability is comparable to that of an unarmoured surface cruiser, and is believed to be less than that of sub-surface craft; cost is very low.

No performance figures are given, since such statistics have been published so frequently and widely in recent months that it is assumed every one is familiar with them.

Role of the Blimp.

1. Training of personnel.

2. Research, test, and development; mapping, photographic, and general utility.

3. Strategical :—
   (*a*) Scouting and patrolling in coastal belt.
   (*b*) Convoy escort in coastal belt.
   (*c*) Covering mining and sweeping operations, etc.

4. Tactical :—
   (*a*) Tracking enemy, keeping cover if possible and keeping own force commander informed (coastal belt).
   (*b*) Attacking enemy submarines and other craft if favourably disposed (coastal belt).
   (*c*) Retiring or taking cover before attack by enemy craft.

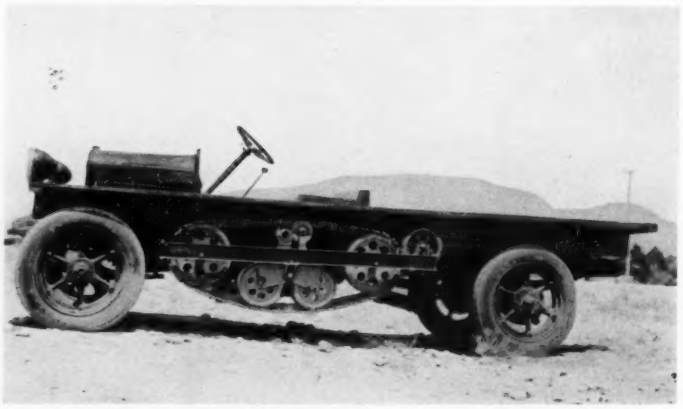
Role of the "ZRS" Airship.

1. Major strategical mission: operating as a scout cruiser with the fleet in a naval campaign, both positive and negative areas (generally at low altitudes).

2. Major tactical mission :—
   (*a*) Unless otherwise directed, tracking enemy and keeping C-in-C fully informed.
   (*b*) During or before contact of main bodies :—
      (1) Scouting on lines of probable enemy retreat.
      (2) Scouting on lines of probable own retirement.
      (3) Covering movements of enemy fleet components, such as a detached cruiser squadron, destroyer squadrons, or "ambushing" submarines.
   (*c*) "Follow-up" phase: tracking enemy, and keeping C-in-C informed as to retreating or pursuing enemy; harassing enemy small or disabled craft.

3. Secondary missions :—
   (*a*) Convoy escort (ocean).
   (*b*) Enemy commerce raiding.
   (*c*) Blockade, or control of neutral shipping.
   (*d*) Bombardment of enemy territory, coastal or insular.
   (*e*) Communications, despatch, transport and general utility.
   (*f*) Direct action against backward coastal or insular communities.

THE "FOUR TRACK" TANK.



CROSS-COUNTRY LORRY WITH TRACKS 'UP.'

LORRY USING TRACKS TO CROSS A DITCH.

TWO EXPERIMENTAL MACHINES

TWO EXPERIMENTAL MACHINES

By Brevet-Lieutenant-Colonel G. le Q. Martel, D.S.O., M.C., R.E.

DURING the past year two experimental machines have been constructed in Quetta which have aroused some interest. The first of these was a "four-track tank"; the idea underlying the design of this machine is the following.

Until now practically all tanks have been steered by what is known as "skid" steering; that is to say that the power is removed from one track so that the other runs ahead and the machine skids round. This process can be accelerated by braking on the inner track, but whether the turn is taken slowly or quickly it is effected by the tracks skidding on the ground. This process naturally absorbs a considerable amount of power and sets up certain stresses which probably account for nine-tenths of the troubles that occur in tank design. Palliatives have been introduced in various forms, such as the use of different gear ratios on the drive to each track or by epicyclic transmission, but the difficulty of steering has always been, and still is, the basic trouble in tank design. So long as a tank is not more than about twice as long as it is broad the trouble is not very serious, but it is obvious that with a long narrow tank it becomes much harder to skid it round to a new alignment. If, therefore, it were possible to construct the longer tanks very wide, no great steering difficulties would arise. Unfortunately tanks have often to use roads where they must be able to pass other vehicles, and this restricts a tank to a width of some 6 feet.[1]

Now our present light tank is about 12 feet long, i.e., only about twice its width and the steering works well. But twelve feet is a short length for a tank; it can be defeated by fairly small irrigation ditches. Moreover a steady platform for firing is a very important feature in tank design. When we go to a tank which is 18 feet long or more and only about 6 feet wide the steering difficulties become pronounced. A heavier engine and transmission and track have to be used for this reason and we come at once to a "medium tank" weighing anything over 8 tons, and in actual practice much more.

[1] The *legal* limit in England is 7 ft. 6 ins.

The "Four-Track Tank."

For many purposes we should like a light tank with all the advantages of lightness, but we would still like it to be 18 feet long at least. It was with a view to trying to find a solution to this problem that the "four-track tank" was constructed. The general design can be seen in the illustration. The fighting body is in front, and it consists merely of a steel box of $\frac{3}{16}$ths inch plate, though any desired form of body with a turret could be fitted. The engine is in rear and separate from the fighting body. The machine was, of course, entirely experimental and in certain ways the design was left in rather a crude state to save expense. For instance the engine is unnecessarily high in rear and the radiator should be dropped about 10 inches. These alterations would have entailed special design and extra expense and were unnecessary for an experimental model.

The engine was a 16 h.p. Morris which was lent by Army Headquarters in India. This drove by silent chain to a point mid-way between the banks of tracks. From here the drive was taken forward to the front tracks and rearwards to the rear tracks. Each pair of tracks was driven through a normal motor car back axle with differential. The rear tracks were mounted on a turntable and the machine was steered by revolving the rear tracks. In addition this turntable was pivoted fore and aft so as to produce the effect of three point suspension for the machine.

The experimental work took nine months. When it came to the first trials the machine steered very easily without skidding, but there was considerable trouble with the control of the rear tracks. This trouble was, however, overcome and eventually the machine steered almost as well as a motor car. The turning circle was 12 feet radius, but there is no reason why selective brakes should not be fitted for skid steering when necessary. The occasional use of skid steering would not have the deleterious effect of continual steering by this method.

A further point in the design was that the small space between the tracks would often "absorb" an obstacle such as a boulder. With an ordinary tank the whole machine mounts up when a large boulder is met and eventually the tank crashes over on to the far side. With the four-track tank the machine did not mount to so steep an angle, because the boulder would usually sink or partially sink into the space between the tracks.

The tank was built only 11 feet 6 inches in length owing to the expense of constructing a larger machine. With this length it had a good cross-country performance, but no better of course than the light tank which is 12 feet long. It seems, however, reasonably certain that a longer machine would steer equally easily and would have a greatly

improved cross-country capacity and steadiness as a gun platform. This, however, has yet to be proved, and it is possible that a longer machine might bring other troubles and complications with it which have not so far made their appearance. The experiment was, however, an interesting one and well worth the time and labour and expense that was spent on it.

A Cross-Country Lorry.

The second experimental machine was built in Quetta quite recently; in fact Mark II of this machine is still under construction. This experiment was an attempt to provide the type of cross-country lorry that, I think, we need in the Army.

The position at present seems to me to be as follows. Our lorries are used for station work and running on roads for nine-tenths of their employment. The remaining work is cross-country running carried out occasionally on manœuvres and in war. The six-wheel lorry has filled this requirement fairly well and has served a useful purpose, but my opinion is that it is not entirely satisfactory. In initial cost and running expenses it is some 25 or 30 per cent. more expensive than an ordinary four-wheel lorry and when we remember that its cross-country capacity is so seldom used, we wonder whether this extra cost is justified. As a result official experiments have been carried out with four-wheel lorries with oversize tyres. This type reduces running costs considerably but the tyres are expensive and the cross-country capacity is reduced except for the lighter lorries. Some very good cross-country performances have been put up by four-wheel lorries with oversize tyres, assisted by strips of netting and similar devices, crossing sandy patches; but the passage of a few lorries driven by experts is a different proposition to taking a M.T. convoy over the same ground driven by ordinary drivers. The ground becomes cut up and deviations are not always possible, while the laying of netting takes time if a large number of lorries are to pass over it. The fitting of some type of chain is also necessary in mud and this is often difficult to do if the vehicle has already stuck in the mud which is not an uncommon occurrence. What I suggest we require is an ordinary cheap lorry with ordinary size tyres, but with the capability of changing this lorry at will into one with a cross-country capacity. This was the idea underlying the trial that was carried out.

The illustration shows the lorry, and it will be seen that it is fitted with tracks. These tracks have two positions, "up" and "down." In the "up" position the machine runs as a normal four-wheel lorry, the actual machine being a Chevrolet. These tracks would not normally be carried on the lorry for station duties. They can be fitted in about half an hour and would normally be kept in mobilization stores and

only fitted for manœuvres or war. When fitted they can be jacked up or down in less than a minute.

The method of working when carrying the tracks is as follows. The lorry is driven as an ordinary four-wheel lorry till bad ground is met. The tracks are then lowered. If the lorry has run into mud or soft sand with the tracks "up," they can still be jacked down to the proper position. Then when the clutch is let in, the back wheel drives a small friction wheel which in turn drives the track and so propels the machine. The illustration shows the lorry crossing quite a wide trench and soft ground; muddy streams have also been crossed. The first model was an old three-speed Chevrolet with a bottom speed of 18 to 1; this was much too high for heavy work in sand and the new model uses the new four-speed gear box with twice as low a reduction.

Some trouble has been experienced with the friction drive, but it is hoped that this may be overcome in the next model.[1] It is too early to say whether the result will be successful or not—so much experimental work results in failure that it is never safe to be optimistic; but if it is, then it seems that some development on these lines might give us just what we require.

The scheme would be as follows. The Army buys normal four-wheel lorries which it uses without having to pay for any extra running cost for normal work, but it specifies that the lorry shall be fitted with certain lugs to carry the tracks. As regards the tracks we should aim at something weighing 4 cwt. and costing say £50 per pair. We would then have a cheap four-wheel lorry changeable at will into a really good cross-country machine for an additional capital outlay of £50 per lorry. The design has been patented in case it should have a civilian use though this is not very likely.

It is surprising how much can be learnt by carrying out experimental work of this kind. It was done privately, at no expense to the Government, and the information gained has been passed on to the technical officers concerned. It should, however, be remembered that although such work may be useful in producing new ideas and giving valuable practical data, a good deal of slow plodding work is necessary before the project can be translated into a serviceable machine. It is one thing to invent a freak machine that looks very wonderful, but it is quite another to go into production and produce a serviceable article. Even then it needs an engineer with wide technical knowledge and experience to say whether such a machine is likely to remain a freak for ever or has the makings of a practical idea for a Service machine.

[1] NOTE.—Mark II model of the lorry has now been tested and the trouble with the friction drive has apparently been eliminated.

THE TRAINING OF THE MECHANICAL TRANSPORT DRIVER

By CAPTAIN H. J. COOPER, R.A.S.C.

If you wish to have a good war steed you must exercise him in everything which may be required in war. He must leap ditches, scramble over walls, spring up ascents, dash down declivities, and be trained to charge on slopes, uneven ground and traverse roads and paths. Many horses fail, not for want of ability, but for want of experience in these things.—XENOPHON.

A SLIGHT transposition of these words might well form the creed of those who train mechanical transport drivers. As one travels about the country one often sees convoys of naval, military and air force vehicles belonging to driving schools proceeding at varying paces with varying degrees of safety, and one often hears discussions as to their necessity. Would it not be better that, instead of driving empty lorries up Kingston Hill, practice should be made over rough country, up and down steep declivities, over sand and in and out and over rock-strewn country? Experience in all these things is required, and the methods of acquiring it are included in the curricula of nearly all driving schools.

The designation, "driver, I.C.," in the British Army embraces all those who are engaged in the operation of mechanical transport. Thus many arms and branches of the Service are involved, each of which possesses a special technique superimposed on broader training principles. It is to a consideration of these broader principles that attention may be profitably directed and the system adopted for the training of recruits for load-carrying transport duties may be conveniently studied. The training of the driver is divisible broadly into two periods, that devoted to military and that occupied with technical training. The first period extends from the man's acceptance as a recruit to the end of his recruit training. Thus every driver is a soldier first and a technician afterwards. Emphasis is given to this simple fact, since it is a common complaint in the technical corps that men have to bear arms, to appear on parades, be marched in an orderly manner from their barrack rooms to their work, and to behave as though they were simple infantrymen. Such lamentations seem to imply that even a slight acquaintance with mechanical science and systems of levers should allow their practicians to introduce the habits of a football crowd into the Army. But though

this attitude of mind is not universal, it is common among those whose military experience has been warped by a continuous and close proximity to machinery. For war is an affair of men not of machines; of the human mind not of internal combustion engines. So is the operation of the vehicles of modern armies dependent, in the limit, not upon the design of apparatus, or the supply of fuel, but on the ability of the man in control.

" In these days of swift invention
It is frequently believed
That the pressing of a button
Is as good as work achieved.
But the optimist inventor
Must remember, if he can,
That, though machines be perfect
There are limits to the man."

ANON.

Trite perhaps, but none the less indicative of the attitude too common in collective training.

Experience has shown that about three months is required to fit a recruit for the technical portion of his training, and that the minimum number of subjects with which he must be acquainted are :—drill; physical, educational, weapon and anti-gas training; games and interior economy. This latter comprises instruction in domestic duties, pay, messing, clothing and physical and moral deportment.

A suggested allotment for a training period of three months is :—

Subject	Drill	Physical Training	Weapon Training	Educational Training	Anti-Gas Training	Interior Economy
Hours	100	55	42	40	3	20

When the recruit is sent up for his technical instruction he is able to be moved about on parade with ease, will respond rapidly to command, will be alert and fit and in possession of a third-class certificate of education. Thus the technical instructor has an easier task than the training company commander. And the circumstances of modern life tend to make it easier still, as many boys and youths have handled motor cycles and wireless apparatus, which means that they have been brought up from infancy to time the movements of hands and feet to the working of levers or other apparatus. Also men possessing similar previous experience will tend to enlist in corps where these civil attainments will be of use to them—to command better pay, to receive more rapid promotion and to suffer less from the *tædium vitæ* of the private soldier's life.

The technical syllabus is arranged so that a recruit of average ability with a third-class certificate of education will, on passing out from his

class, be able to drive a loaded medium lorry either on a road or across country, will be able to ride a motor cycle and to have an acquaintance with the lighter forms of transport; also he will be able to explain shortly the principles of operation of the components of the various vehicles and to diagnose simple faults.

The hourly allotment in a course of 8–10 weeks could conveniently be :—

Subject	Regt. Duties	Lectures	Driving and Maintenance Instruction	Workshop Instruction
Hours	50	85	145	20

The standard of intelligence, ability and application of the squads of each class may fluctuate and individual standards will show wide divergences, so that the syllabus must be elastic in order that the more advanced may receive more experience in diagnosis, repair work and theoretical instruction, whilst those who learn more slowly may have adequate time for revision. An initial examination and periodical tests give indications to instructors of the progress of each recruit.

The training, in so far as is possible, is regularly progressive. Practical instruction commences on stationary vehicles and proceeds via vehicles on stocks and outdoor instruction on the square, on open country, on roads of varying traffic density up to the main roads of London. It is important to realise that a recruit should be master of his vehicle before he goes on the road—that is, he should be able to judge distance accurately, to reverse and to manœuvre in confined spaces. For it is suicidal for him to be allowed to drive in extended convoy on public roads if he is only able to drive forward in a straight line somewhat hesitatingly through his range of gears. Also " loaded " and " unloaded " instruction must be sandwiched; it being unreasonable to suppose that a recruit trained and passed out on an empty vehicle should acquire perfect control of a loaded lorry in a congested garrison town immediately on posting to a service company. Similarly with theoretical instruction.

A simple history of the car and lorry is given and then a vocabulary of components is made under the guidance of the instructor. Each name is illustrated by several different makes of the part: the parts are passed round so that their size and shape may be impressed on the student's mind. Later, in the workshop, the learner is able to dismantle and to erect the parts, gaining first-hand knowledge of their location and function in his vehicle. Similarly also with diagnosis; a simple elimination chart is compiled during lectures, and this is then worked through on the square or on the road. During the workshop period each recruit has to trace simple faults in front of his own class.

Thus, when a reinforcement driver is posted from the Depot Training Company to a service company, he is capable of being sent on detachment duty or taking part in collective training with other arms. But it is illusory to imagine that he is perfect—incapable of further improvement. However keen, experienced and adaptable a recruit may be, like all other men, he continues to learn throughout his service—his military life. Preparation for war cannot be taught in a training company, only the elements can be studied. Practice is needed in manœuvring across country, in recognising shapes and contours in dim light, in reading maps and predicting possible courses from a look at the country. Neither is this to be attained in the normal routine of peacetime when domestic duties absorb many tradesmen. There is a tendency in all arms to put the least knowledgable into the more permanent domestic jobs—kitchens, offices, police hut and stores. The system may have some slight merit in ensuring continuity, yet continuity in the fatigues of soldiering is as demoralising as the drudgery of industry.

Transport units are trained individually and collectively as are all other units taking part in exercises as though they are on active service. Thus practice is afforded under conditions which in some degree approximate to those of active service, but the actual conditions cannot be simulated, and often the supply baggage and ammunition companies degenerate into a twenty-four hourly parcel delivery service to the destruction of both driver and vehicle.

When drafted overseas the driver is able to add to his experience by driving in other conditions than on the tarred roads and in the mud of England. Unfortunately, only in Egypt and in Palestine can he be trained on the dry ground of a possible middle eastern expedition. The fact that India is no longer one of his overseas stations has seriously restricted his training ground, for there every kind of climate and every geographical obstacle can be found. Thus the potential driver N.C.O. after a tour of foreign service has amassed considerable experience upon which he can draw when posted to a home company.

N.C.Os. and men of other arms and branches of the service are trained on similar lines; experience has shown that the syllabus is sufficiently elastic for short courses for men of the more technical corps. Previous experience and their normal duties allow them more rapidly to achieve the required standard, and more time becomes available for diagnosis and for workshop instruction. The position of the workshop instruction in the syllabus is a debatable question. To place it last of all is rather putting the horse after the cart, because during the lectures and driving recruits work blind—only seeing at the end of their course the relation of one part to another. To interlard it with driving causes

considerable administrative difficulties when instructors, lecture rooms, exhibits and vehicles are limited. It seems that the best place for this section of the curriculum is just before the commencement of the lectures on the uses and working of the components and during the stage when driving instruction is confined to stationary vehicles and the square. For this there is considerable precedent in civil life were precedent required. Before an apprentice or pupil is allowed to handle tools he is put into the tool-store for a space to learn their names, to become familiar with them and to understand which artificers use them.

However good the initial training is, unless continuous practice in driving and maintenance is given, drivers deteriorate. It has become the fashion to decry the horse and for modern soldiers to sharpen their wits at its expense. Yet it provided the unit commander with a very fine routine for his day's work. Morning stables, a parade, work, mid-day stables, work or play and evening stables roughly comprised the day. But there is no similar system to be found in the present standing orders of units. Slavishly to follow a routine suited to animal life might well be farcical, but the embodiment of the salient features of the old system in the modern military day would tend to improve the standard of vehicle-mastership in the army and ensure that the N.C.O. spent less time in clean khaki with a pencil in his hand. It is a continuous complaint of the conservative that the introduction of the present educational training in the army gives an impetus to long hair, poly-syllables and spectacles. So it is also true that the early portion of a driver's day has degenerated to a scramble from his bed to the driver's seat via the mess room. Much maintenance work could be completed in the morning and minor adjustments could be more easily undertaken then than when much of the mechanism is too hot to handle. At schools other than the day variety, there is always work of a sort before breakfast; and until recently this rule obtained throughout the heavier mechanical industries in the country. In the larger firms devoted to carriage and haulage one does not see a driver vault off his bicycle into the seat of his lorry or bus and drive away. Yet even a cursory acquaintance with mechanised units leaves a picture of this vault from the saddle and rush from the garage on the mind of the observer.

On the other hand, it may be urged that if such a procedure were adopted it would mean that lorries would be out for even longer hours or wait about for even longer periods. And this question of waiting is especially demoralising. A pair-horse waggon could not be kept waiting without the animals becoming restive and comment being made by passers-by. Not so with a lorry. If it waits at its rendezvous for an hour or so no one utters a sound. Also there is a growing practice

to treat a transport company as a fleet of delivery vans. This requires a high standard of initiative on the part of drivers, and may have the merit of speeding up the traffic on main routes, but unfortunately it postulates that the drivers must be almost tireless automata able to take their food at widely spaced and uncertain intervals, and then only if they happen to have been provided with a haversack ration unless they find the kitchen open before they start or when they return. All military transport has passed through this phase—Aides-de-camp in the Seven Years' War—light vans and motor cycles during the last War. Umpires being allotted a horse and horseholder to-day run all three off their legs, forgetting that food and rest are essential to man and horse.

A glance at present day war establishments and a knowledge of modern tactical methods leads to the conclusion that the second and third line of transport vehicles during the opening phases of an encounter battle may be spread over an area of five to six hundred square miles; a division is visualised as moving on a front eight to ten miles wide, while the distance of railhead from delivery point being between sixty and seventy miles.[1] A strip of country similar to the distance of London to Woodstock on a front the width of the length of the Hog's Back; there is ample scope for working the drivers to death. It is to cope with this drive to death over the country of a possible middle eastern campaign that the courses at the driving schools are devised, but the exigencies of the service preclude all but a very few from gaining prior experience of it.

[1] F.S.R., Vol. 1. Sec. 104 (2).

GUNNERY AND THE NAVAL BATTLE

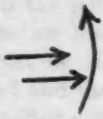
By "TRUNNION."

MAHAN has remarked that it was by its men, rather than its material, that the British Navy of the XVIIIth century triumphed. It in no way belittles the achievements of our ancestors to add that they were exceptionally fortunate; not because their responsibilities and difficulties were any less to them than ours are to us, but because they had the one inestimable advantage that they were trained in battle. To-day, we have reached a stage when the majority of officers serving afloat have not seen action, and already responsible positions are being filled by officers of only post-War, or at any rate post-Jutland, experience.

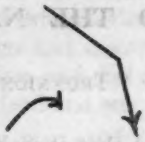
It is most essential that war experience should be used and kept alive to the utmost and, what is more, handed on; otherwise a generation will soon grow up whose ideas of battle will be based solely on peace practices. These practices differ so greatly from the real thing that they will almost certainly produce ideas which will turn out to be wrong when put to the test. It can do no harm, therefore, to review from time to time certain aspects of our training from the point of view of battle. Officers who have no personal experience can do no more than study in detail the accounts of actions and the lessons learnt. Comparing their ideas of action difficulties with modern practice, they will be bound to come to various conclusions, naturally not all in agreement. Whether their conclusions are right or wrong can still be answered by senior officers. In the following attempt to do this, no apology is made for the fact that gunnery is the only subject dealt with. It is the writer's own line of country, on which alone he feels qualified to speak.

Before dealing with purely gunnery aspects, however, it is proposed to refer to a most interesting article entitled "Some Thoughts on Naval Tactics" published in the JOURNAL of November, 1931. The author first of all reviews the outlook on tactics, and suggests that most officers have, as the basis of their tactical thought, ideas of diagrams of fleet exercises and battles. Undoubtedly that is so. Most of us, when we

think of Trafalgar, visualize something like this :—



Or, when recalling a phase of Jutland, this :—



The reason is, of course, that we have studied the accounts and diagrams of such actions, and those are the forms in which they have been impressed on our memory.

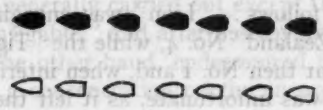
The same writer also points out what we all know, but are liable to forget, that a battle is a very different affair to its representation in diagrams: "a time of difficulty and doubt, of enemy ships indistinctly seen and uncertainly identified, of hesitations, of breakdowns or misuse of communications; a time when a battleship becomes a true entity and not only part of a fleet; of mist and noise and casualties and smoke; a time when things appear utterly unlike the diagrams which will subsequently be drawn by historians."

This is undoubtedly the way in which a battle should be remembered and, if we all had "Phormio's" gifts, the way in which it should be described. Further, it is the atmosphere in which we must place ourselves before we can attempt to criticise actions taken and decisions made. More important still, it is the way in which we must train ourselves for our own turn in the future.

Can we honestly say that we try to do this? Peace practices are staged in as realistic an atmosphere as possible, but already many people think of action as something not far removed from this :—

Years of peace practices, and no personal knowledge of anything else, will accentuate this outlook, although we may say "of course it would be a good deal more difficult than that."

The tactical dispositions of our own and the enemy's fleets are illustrated by diagrams such as this :—



All this may be unavoidable and, provided it does not influence our training, may do no harm. But the danger is that it probably does influence our training. People expect that they will be able clearly to distinguish their target, and that they will only have to do what they are told. They expect to be confronted with situations something like those illustrated, and they are trained for no others.

After Jutland the idea was predominant in the fleet that we had been robbed of decisive victory by the ill luck of bad visibility. If by that is meant low visibility due to natural causes, such as light and weather, one may question whether that really was the case. Although it does seem to be established that the visibility to the East was not so good as to the West, there were very few complaints about it at the start of the action. Smoke is referred to often, but as regards weather conditions various accounts refer to it as "a perfect day." Towards the end, visibility was unquestionably the ruling factor, and both sides were groping through the fog of battle. And that is what we must expect and be prepared for. With funnel fumes, cordite smoke and the smoke of fires and explosions, to say nothing of smoke screens, whatever visibility is like at the outset it will always be bad when once battle is joined.

After Jutland, and since the War, great strides have been made in fire control, both as regards the actual control and the instruments. Concentration, perhaps the most important factor in battle, has been brought to a pitch it has never reached before. A procedure for distributing the fire of the fleet has been evolved and elaborated until it can compete with almost every contingency. This has been achieved only by progressive training, but it is a peace-time training, based on peace exercises. Let us see, therefore, what happened to attempts at concentration during the last War.

Dogger Bank.

It will be remembered that at the battle of the Dogger Bank our battle cruisers were coming into action one by one. As the chase proceeded to the eastward the enemy battle cruisers were in the order "Derfflinger," "Moltke," "Seydlitz," "Blücher." Admiral Beatty's

report says, " . . . at 9.35 a.m. I made the signal 'Engage the corresponding ships in the enemy's line.' By this time 'New Zealand' was within range of 'Blücher' . . . and opened fire on her. About 9.45 a.m. the situation was as follows:—'Lion' was engaging No. 1, 'Princess Royal' No. 3, 'New Zealand' No. 4, while the 'Tiger,' who was second in our line, fired first at their No. 1 and, when interfered with by smoke, at their No. 4. This was unfortunate, as it left the second enemy ship unfired at, and she concentrated on 'Lion.'"

The "Lion's" report says "'Lion' certainly had the measure of 'Derfflinger' at this time (about 9.50 a.m.), and it is thought that it was only the great support given her by 'Moltke' which saved her and enabled them to combine eventually to injure 'Lion' severely, otherwise 'Lion' would have sunk 'Derfflinger.' 'Moltke,' being unfired at, had a clear run at 'Lion' for one and a quarter hours. At 10.18 the effects of the enemy's concentration began to be felt."

And, at 10.54, we have Admiral Beatty's report again, "It was now clear that 'Lion' could no longer remain guide of the fleet. At 11.5 a.m. I hoisted the signal "Attack the enemy's rear,' hauled down the course signal and hoisted 'Keep nearer the enemy.' At this time 'Lion's' wireless apparatus was out of action and only two signal halliards remained."

Three facts emerge from these reports. First, that under the simplest conditions a distribution of fire signal went wrong. We may say that with our present system such a thing is most unlikely, but however efficient communications may be, they will not prevent mistakes in individual ships. Secondly, within a comparatively short time, the "Lion's" W/T was out of action, and of course this may happen at any time. Thirdly, the Germans evidently could concentrate the fire of two ships on one ("Derfflinger" and "Moltke" on "Lion") without serious interference, for it was not long before the effect was felt. Our state, however, was not so happy. The "Tiger" was firing throughout on other ships' targets, and was apparently confusing their fall of shot with her own. Her fire was largely ineffectual.[1]

JUTLAND.

Much of the gunnery experience gained at Jutland was acquired during the battle cruiser action, which started with the "run to the South." The five German ships engaged were in the order "Lutzow,"

[1] *Vide* the "Birmingham's" report, which says, ". . . about this time (10–10.30 a.m.) 'Tiger's' salvos were plainly distinguished as going very much over, I should say 800–1,200 yards; the guns were shooting very well together but all consistently over."

" Derfflinger," " Seydlitz," " Moltke " and " Von der Tann." Our six were the " Lion," " Princess Royal," " Queen Mary," " Tiger," " New Zealand," and " Indefatigable." Hipper ordered a ship for ship distribution, and this was generally carried out except that " Von der Tann " first engaged " Indefatigable," and after destroying her shifted to " New Zealand." We, on the other hand, endeavoured to use our superiority of one ship to effect a concentration on the enemy's van.

At 3.46 p.m. Admiral Beatty ordered the " Lion " and " Princess Royal " to concentrate on the enemy's leading ship. But neither the " Queen Mary " nor the " Tiger " received the signal, with the result that the " Queen Mary " at first engaged the third, and the " Tiger " the fourth enemy ship, leaving " Derfflinger " unfired at. In the early stages, too, the fire of one of our ships was going astray, as the light cruiser " Regensburg," 2,200 yards on the enemy's disengaged beam, found that at times our fire endangered her and her destroyers more than it did the battle cruisers.

The " Queen Mary " soon shifted to the " Derfflinger," and the " Tiger " shifted to the " Seydlitz " when the " Queen Mary " blew up. Later on, by 5.10 p.m., the " Tiger " experienced great difficulty in keeping on her target, as the " Regensburg," now stationed at the head of the German line, kept appearing and then disappearing, and was frequently counted in as a battle cruiser.

These events illustrate the two inherent difficulties of concentration. First, we see the difficulty of communications and the effect of their failing or being misunderstood. This, we notice, occurred even during the opening phase of the action, as it did at the Dogger Bank. Peace training may reduce the likelihood of this happening provided communications remain intact. Secondly, there is the difficulty of identifying the target. No amount of peace practices can entirely overcome this, and we are all apt to make the same mistake as the " Tiger " did about the "Regensburg." Another weak link in the system was evident from this phase of Jutland, as also at the Dogger Bank, for, by the time contact was made with the Grand Fleet, the " Lion," " Barham " and " Lutzow " had all lost their wireless.

Concentration in those days consisted in putting two ships on to one target and leaving them to do the rest. If it went wrong, the chances were that one or more of the enemy was unfired at, and both at the Dogger Bank and at Jutland that is what occurred. Moreover, whether the concentration signal went right or wrong, the difficulty of mutual interference remained, and this naturally affected our hitting. It was the need to remove this interference that caused our concentration procedure of to-day to be evolved.

The Germans, on the other hand, did not feel the effect of interference so much as we did. They had a perfectly simple system of two-ship concentration which entailed no communications or restrictions whatsoever, and which had obviously been worked up. We saw its effect at the Dogger Bank, and at Jutland it was even more efficacious. It consisted of three reliable fall-of-shot hooters—hit indicators—each worked by a separate man, and is described by Commander von Hase, gunnery officer of the "Derfflinger," in his book "Kiel and Jutland." There he relates how, much to the annoyance of everybody, he went to General Quarters early in the afternoon of the 31st May. When testing through, he found that two of his three fall-of-shot hooters were not working, and ordered new fuzes to be put in. Later he was rewarded. He speaks of his delight at finding, when the action opened, that his own ship was not being fired at. However, that did not last long, as the "Queen Mary" soon shifted target, and he says, "I had to admit that the enemy was shooting superbly." She was apparently firing broadsides, which the "Derfflinger" was able to dodge with fair success. "But the poor 'Queen Mary' was having a bad time. In addition to the 'Derfflinger' she was being engaged by the 'Seydlitz' . . . The good functioning of our hit indicators prevented any danger of Lieutenant-Commander von Stosch (the spotting officer) or myself ever confusing our own shots with those from the 'Seydlitz' 28 cm. guns. As the range was always more than 130 hm.[1] neither ship could yet bring her 15 cm. guns to bear.[2] A simultaneous engagement of the same enemy by two ships was also only possible so long as both ships used their heavy guns only."

This concentration seems to have started between 4.15 and 4.20 p.m. At 4.26 the "Queen Mary" blew up.

The "Invincible" was also sunk by the concentrated fire of two ships. When first she came into action the visibility to the East was bad, and they could not see her well. Then she stood out, and the "Derfflinger" and "Lutzow" concentrated on her. After they had each fired three salvos, she also blew up.

So much for the battle cruiser action. As far as our battle fleet was concerned, concentration could play little part. At 6.55 p.m., when the fleet was getting into action, Admiral Jellicoe's report says, "firing was general in the battle fleet, but the use of distribution of fire signals was out of the question, only three or four ships being in sight from the

[1] The range was 14,400 yards.

[2] It was the German practice, when hitting and within secondary armament range, to fire two salvos with the secondary armament between each main armament salvo.

van and centre, although more were visible from the rear. Ships fired at what they could see, while they could see it." This state of affairs persisted throughout the action, and it would be impossible to give a better summary of the conditions which existed then and for which we must be ready in the future.

Conclusions.

The foregoing examples of our experiences in the late War must suffice to show the lines on which the following conclusions are formed.

Concentration in some form or another is one of the main problems of tactics, and, in battle, concentration of gunfire is, obviously, the ultimate object of all other forms. If a strong concentration can be achieved, and is effective, decisive results will be obtained. Nevertheless, concentration of fire, as we know it, depends on two things, target identification and communications. Target identification largely depends on visibility and it is asking a lot of fate if our primary system is to depend on so variable a factor. Add to this the known fact that the action itself makes visibility increasingly bad, and the balance is weighted even more against us.

Communications are essentially flimsy things, and are liable to breakdown or destruction at any time in the action. Their very efficiency in peace is a danger, as we come to depend on them too much.

It is very likely, therefore, that controlled concentration will not be possible in action—" the use of distribution of fire signals was out of the question." When this occurs, the action, at whatever range it is being fought, becomes in effect a *mêlée*. Captains of individual ships have to think for themselves, take the chances they get, and do the best they can for themselves and for each other. Everyone knows this and, in fact, it is the basis of our personal training. But when this state arises, and the action indeed becomes a *mêlée*, can we be sure that we will take advantage of it? May there not be uncertainty, hesitation, delay, while we are waiting for a distribution of fire signal, because we are afraid of interfering with somebody else?

In our training the only alternative to controlled concentration, in which communications or restrictions play some part, is single-ship firing. Of course this training is essential, but it does not fulfil every requirement. It is quite possible that in action five ships in different parts of our line might see four of the enemy. Then one of two things must happen. The fifth ship, peace trained, may withhold her fire—happily this is not likely; or she will join in on a target already under fire. Unless we have practised this condition, interference will result, as it did in the past.

It is so essential that no chance be lost of concentrating the fire of two ships on one enemy that a third condition must also be allowed for. Ships must be trained so that at any time two ships can fire on one target without any communications or restrictions whatsoever. This form of firing has taken place in every modern action, and it seems to be the most likely form in which we shall see concentration in a future battle. In fact, one can go further and suggest that "independent concentration" will always be going on somewhere: either in the destroyers' "dog fight," amongst cruisers hurrying to support each other, or in ships in different parts of the line sighting the same target.

Concentration without communications or restrictions, in fact "independent concentration," cannot be difficult, as we know it was done successfully sixteen years ago. Nor need it slow up the rate of fire, as we know that the "Derfflinger," while carrying it out, fired a main armament salvo every twenty seconds. It is unfamiliar and obviously more difficult than single ship firing, so at first we must expect interference; but the more we train for it the less the interference will be. In modern ships there are instruments which are well able to compete with it. In older ships the instruments by which the fall of shot is identified would need improvement, but it is not beyond the wit of man to accomplish that.

Such a system would probably never give the results which, on paper and in peace time, are obtained by existing systems. Its importance lies in the fact that under certain difficult conditions of action, it would give better results than would be obtained by the complete lack of training for unrehearsed conditions which exists at present. The state of training which, it is suggested, we should aim at is that the fleet could go into action knowing that:—

(*a*) Squadrons may be required to concentrate their fire—this they know they can do, as at present;

(*b*) Ships may engage single targets—this also they can do;

(*c*) In the event of controlled concentration not being possible, everyone will have complete confidence, that they can engage any enemy already under fire without knowing who is firing at her, without hesitation, and with no fear of interference; and that, even if opportunities for concentration are not observed by the Admiral, they need never pass by.

To-day, these conditions, although not completely attained, might be attempted, but from lack of training the best results, under the third condition, would not be obtained. How much less will they be obtained, or even attempted, in twenty years time if, by then, our Captains, as well as their gunnery officers, are entirely peace trained?

It would not be difficult to bring peace practices into line with these requirements. Single-ship firing is of course essential, particularly when newly commissioned; but once a ship is efficient, such a firing should be a rare luxury. Concentration, also, is essential, but it is a special system, to be used when circumstances permit or on special occasions.

The form of firing which is most likely to be required in action and which, therefore, we should practice most in order to feel really at home with it, should be independent concentration: two ships on one target, no communications, no restrictions. If this were done, we might, in time, be able to add—no interference.

To advocate additional training under present conditions of economy and ammunition allowance may sound like crying for the moon. However, we must expect the pendulum to swing some day, and conditions in that respect to improve. In any case, whatever the allowance may be, there is always the question of whether we are getting the best value out of it.

In conclusion, I suggest that every executive officer should have firmly fixed in his mind the words of Admiral Jellicoe's report "The use of distribution of fire signals was out of the question. Ships fired at what they could see, while they could see it."

OLD COMRADES ASSOCIATIONS

By Brevet-Major the Hon. R. C. Bridgeman, M.C., The Rifle Brigade.

THE " regimental spirit," which has lately been much to the fore in not a few articles appearing in the Journal, can be regarded as being a most treasured possession of every good regiment. It has played its part in war not only as an adjunct to good organization, but as a means whereby defeat, born of bad organization, has been turned into victory. There is no need to labour the matter; every regiment has its own instances to which it points with pride. Moreover at the present time the popularity of military tattoos and the consequent demand for new items in their programmes has had at least one result, namely that of promoting researches carried out with varying antiquarian thoroughness into such events of the past as can be profitably recalled by the soldiers of the present.

So far so good; but the soldiers of the present soon become the soldiers of the past and their places are taken by the soldiers of the future. Consequently we should enquire how far the " tattoo " method of stimulating the regimental spirit will serve to recruit the best stamp of man for the Army. There are those who pin their faith to smart uniforms, bands and pageants, while the ribbons of the recruiting sergeant may still make the same appeal as they did a hundred years ago when penniless, uneducated lads went for soldiers and fought for King George in their scarlet coats; when penniless and limbless soldiers returned from the wars to beg their bread, and few thought it strange or wrong that they should do so. But the recruit of to-day is not quite so unsophisticated. Each regiment has its recruiting areas, official and unofficial, and in those areas the reputation of the regiment rests, not so much on the smart young gentlemen on leave in plain clothes, nor yet on the home battalion, which maybe has won the Army Football Cup, but on the old soldiers of the regiment who have returned to civil life in the district from which they were recruited. To secure, then, the regiment of the future, the regiment of the present depends in great measure on the advertisement provided by the regiment of the past.

It is very desirable that the intending recruit should be of sufficient intelligence to look beyond the attraction of a uniform and of " no worries

for seven years or more " to the day when he returns home and engages in the struggle for civil employment ; then, if he thinks so far ahead, it is natural that he should consider how other old members of the regiment—his father, uncles, brothers maybe—fared when they were faced with the same problem. It is a tougher problem than ever. The increasing specialization of industrial occupations, and the safeguards which trade unions quite rightly enforce to ensure that their existing members are provided with work tend constantly to narrow the field for ex-service men. A body such as the National Association for the employment of ex-regulars, admirable and increasingly successful though its efforts may be, can never deal with the entire problem ; although it may command vacancies in the public service, with local authorities and with large firms, there remain a variety of employments beyond its reach. There are the jobs offered by small employers who have neither the inclination nor the need to register their wants with any semi-official body ; there are the jobs for which hands are engaged by the foreman on the spot and there are those nondescript jobs, hard to classify but none the less providing a livelihood, such as Jess Oakroyd of " Good Companions " fame sampled after leaving his native Bruddersford. There is only one approach to such employments : through a friend.

For this reason, if for no other, a well-organized Old Comrades Association is a necessity to a regiment. The British Legion does not supply the need, because it is an Army organization and as such works for ex-service men as a whole and only indirectly to the benefit of any individual regiment. Bodies like the Old Contemptibles deal almost entirely with regular soldiers ; and the regiment of the past contains not only ex-regulars but old members of service battalions and old Special Reservists, Militiamen and Territorials who alike have the good name of the regiment in their keeping. The maintenance of a regimental Old Comrades Association is therefore the concern not only of those who have retired but of all those still serving ; these, if they wish well of the regiment of the present, must study the welfare of the regiment of the past.

Neither, probably, can one formulate any golden rule for the management of regimental Old Comrades Associations. Some regiments are fortunate in securing the bulk of their recruits from their own county recruiting areas ; in that case the matter is a simple one. The duty falls on the commander of the depot, who, if the relations between Regulars and Territorials are what they should be, will command the assistance of Territorial units and the use of their drill halls as centres for the branches.

Other regiments are not so well placed. Rifle regiments with their depot at Winchester recruit from London and other centres ; many

county regiments find the supply of their own men unequal to the demand, and draw regularly from London, Birmingham, Clydeside and Tyneside. For them the problem is thus far more thorny, since the branches must be created from nothing, and energetic branch officials found. In many cases the recruiting areas are so scattered that the task of keeping in touch with old soldiers has perforce to be abandoned.

The formation of a branch is not a matter to be hurried. In the writer's experience, the proper course, having decided that an area holds sufficient old members to warrant the formation of a branch, is to do nothing until a prospective secretary or chairman has been discovered. It is essential to find the right man; and he may or may not emerge at once, but time spent in reconnaissance is never wasted. It is immaterial what his rank, terms of service or calling may be. The writer's own association includes as secretaries a Territorial quartermaster, an O.T.C. sergeant-major, an ex-special reserve rifleman, now a 'bus conductor, a new army company-quartermaster-sergeant, now a departmental manager, an old-fashioned ex-colour-sergeant, and the keeper of a general shop. But whoever he is, his heart must be in the work and he must be allowed to form his branch in his own way; sometimes indeed he may require a year or two years to "roll the pitch" before the branch can be formally started. Difficulties over a headquarters may arise; a Territorial drill hall is ideal, but a civilian institute adequate; a public house has its drawbacks but is often inevitable. What is essential is that it should be easy of access and a place where every member can meet on common ground.

If one of the avowed objects is to bring those who stand in need of help into contact with those who can afford it, it is no good having the headquarters so "posh" that a man with no tie will avoid coming in. For the same reason, entertainments in barracks are not always the draw they should be. An old comrade once pointed this out to the writer: his argument, rendered from the vernacular, was that while still serving he had only with difficulty refrained from striking the provost sergeant; he knew that he would be on duty at any "do" in barracks and, now that he was no longer subject to military law, the temptation would be irresistible. An extreme case no doubt but logical reasoning. It is easy to start a branch with high ideals, and determination to help the regiment by helping one's less fortunate comrades; it is easy, too, for subtle social distinctions to slip in; the more "proletarian" members will "get the unofficial tip" that their presence is superfluous and the branch soon becomes a branch of the mutual admiration society, and little more.

The number of meetings to be held is another matter which varies in each case; in strong branches with a membership roll of 500 or so all living within a short distance, one evening a month may not be too much; one month, a social evening, the next, whist or a dance. But smaller and more scattered branches will do well to avoid too many meetings; if they are not well supported nobody will enjoy them and the end will come when the committeemen appear and wait in vain for the company. It costs money to attend these festivities and an Old Comrade may belong to the British Legion besides being an Oddfellow or Buffalo, not to mention his religious and political connexions which will involve sundry social activities through the winter. The better is the enemy of the good, and the wise branch secretary will confine himself perhaps to as little as one social or supper each year, during the winter when the evenings are long, one parade to place a wreath on the War Memorial and, if practicable, an annual outing to the home battalion or depot upon some regimental occasion. But he will see to it that these are "all present" parades; it is at these functions that members get to know each other and once in touch they will remain in touch if a real feeling of regimental comradeship exists. It is at these functions too that those who are out of work can be introduced to those who know where work is to be found.

Finance, needless to say, is yet another difficulty—and too much money is almost as dangerous as too little. Heaven helps those who help themselves; if a branch is subsidised by officers who do not really belong to it, the members will feel under no obligation to pay their modest subscriptions; not paying the piper they will neither dare nor care to call the tune. None the less no member who is out of work must stand in danger of losing membership through non-payment. The solution is no doubt, the usual happy mean; small subscriptions from all who are in work; a few vice-presidents paying ten shillings a year to make certain that the secretary's expenses are provided for, and all dinners and entertainments self-supporting or run at a small profit.

There remains the question of the officers' position with regard to Old Comrades Associations. It is a doubtful advantage to have an officer as a branch secretary; once again, if the branch is to appeal to all, the secretary must be able to get on terms with all, and this is not so easy for an officer as for one who has been in the ranks. On the other hand, an officer or ex-officer is much to be desired as chairman and invaluable as president, from either of which positions he can support the secretary to the utmost and intervene if all is not for the best. Officers' support of Old Comrades Associations is best expressed in time and trouble—less well expressed in money; it is often very difficult

for an officer serving with his unit to get in touch with the old comrades; still harder to help in any material way. Yet those who regard the regiment of the past, the present and the future as parts of one whole will neglect no opportunity, and they may be certain that anything they do will not be in vain.

To those of the past such contacts are welcome; they are an acknowledgment of their past services as well as a reminder of their duties towards each other and towards the regiment of the future.

To those of the present, the old soldiers with their medals are evidence of past standards to be maintained; nothing for example can be better for recruits than a church parade with old comrades, and the writer will long remember attending an old comrades' dinner at the depot and witnessing its effect on two picked recruits who came among the guests of the evening. "Crispin Crispian shall ne'er go by . . . ."

To those of the future a prosperous body of old comrades is as good an advertisment for the regiment as an old soldier begging or grinding an organ is a bad one; but times are hard and sentiment will be of little avail unless backed by sound organization. Sound organization entails personal effort, which those who prize the regimental spirit should never grudge when good faith and good business alike demand it for the regimental Old Comrades Association.

HOW THE REGULAR ARMY CAN HELP THE TERRITORIAL ARMY

By Captain G. W. P. Thorn, The King's Regiment, *Adjutant 7th Bn., The King's Regiment (T.A.).*

In the Territorial Army conditions and training facilities vary so greatly that it is literally impossible to evolve any scheme whereby the Regular Army can render assistance to Territorial units according to a system which will be capable of universal application. There are, however, certain factors which are common to all Territorial units. It is therefore desirable to ascertain what these may be; then to consider the characteristics of the Regular Army; and finally to suggest how the two points of view may best be reconciled.

In solving the problem there are three main considerations to be kept in view:—

(1) Expense, which must be reduced to a minimum;

(2) The Regular Army training, which must not be curtailed or interfered with;

(3) The efficiency of the Territorial troops.

The Territorial Army Year

The Territorial year may be divided into three distinct periods:—

(1) *The pre-camp training period*, which varies in different units, but generally speaking lasts from March until July. During this time the Territorial Army carries out its weapon training, fires its annual courses, and aims at completing section training. Recruits must also be put through their drills, while weapon training takes place.

(2) *The annual camp of fourteen days, held between June and September*, which is the Territorial collective training season.

(3) *The remainder of the year.* Immediately after camp, evening parades are continued to enable men, who have been sick or absent, to complete their drills and casuals to fire their weapon training course.

Then follows a slack period during the winter when evening classes are organized for officers, N.C.O's and specialists. In addition, one or two tactical exercises are carried out without troops.

Regular Army Assistance

The assistance given by the Regular Army may conveniently be divided into :—

(*a*) Assistance during the annual camp ;

(*b*) Assistance during the remainder of the year.

1.—*Camp period.*

During the camp period regular battalions will be in the midst of their own collective training. They may have had to provide officers to act as staff captain, brigade machine-gun officer or as brigade umpire. Maybe they will have had to provide N.C.O's to act in specialist capacities and, in addition, they may have other N.C.O's away on courses. Thus, they will have barely enough officers and N.C.O's for their own training. The Territorial Army, then, cannot reasonably expect very much help from their affiliated regular units during a normal camp.

In 1930 the regular army training was curtailed and regular units camped beside Territorial brigades ; some Territorial battalions actually spent their annual camp period with the home battalion of their regiment.

The Territorial Army learnt a great deal. It saw regular battalions at work in the field and it saw them carrying out the daily routine of camp life. It saw a standard, which it had never had the opportunity of seeing before, and unconsciously the Territorial units raised their own standards.

That form of help is, of course, ideal, but unfortunately financial and other considerations make a frequent repetition of such close liaison impracticable. In a normal year the maximum that can be hoped for is the attachment of two or three regular officers to a Territorial brigade with, possibly, a sergeant to each battalion. Even this is asking much from regular units for a fortnight during their own intensive training season. The regular officers will probably be employed as brigade major, staff captain and brigade machine-gun officer ; and so can do little in the way of helping directly with the actual training.

Undoubtedly these officers and N.C.O's are of great value to a Territorial brigade, but it is fairly obvious that the assistance they can give is inadequate. Consider the Territorial requirements during camp : normally a Territorial battalion will probably spend its first week in camp doing section and platoon training—if it has not been possible to do the former beforehand. This task a Territorial unit should be able to carry out efficiently unaided. The second week, however, will probably be devoted to company and battalion training, with possibly a brigade scheme on the last day. It is during this latter period that regular assistance is invaluable.

A Territorial battalion lacks umpires since it has no spare officers to fill that role. For example, during company training a company commander wishes to direct an exercise, and for this purpose he needs his horse. The subaltern, who commands the company must do so unmounted, while another officer is required as an umpire and he, too, is unmounted. In battalion training the lack of umpires is still more acute, and it is in this direction that the help of regular officers is much needed.

In view of these considerations it is suggested that the brigade-major and staff-captain should be found from the regimental depot, and that help from regular battalions should be confined to the second week only; that during this week the affiliated regular unit's training should be suspended, and that it should attach at least one or more mounted officers to each of its Territorial battalions, and one W.O. or senior sergeant to each Territorial company. In addition, there should be a regular officer attached to brigade headquarters as brigade machine-gun officer and another as brigade signalling officer.

With careful organization this arrangement need not interfere with the regular unit's training. The increase in expense would be small, and the regular personnel would be sufficiently numerous to be of real value to the Territorial units. Admittedly the scheme has disadvantages but it seems that more benefit would be derived from short, intensive training, than from training extended over a longer period, which is not so well conducted.

A demonstration platoon is sometimes provided by regimental depots; it is considered that this would not be necessary if the scheme outlined above was adopted. In this way money would be saved and the increase in officers, W.O's and senior N.C.O's would more than compensate for the absence of a platoon of regular troops, no matter how well trained they might be.

2.—*Remainder of the year.*

During camp all Territorial units are concentrated. Their difficulties, and consequently their requirements, are much the same, but during the remainder of the year conditions vary enormously. Some units are concentrated, some are scattered. Some are composed almost entirely of men, who are unemployed and are therefore free to attend courses, whilst others consist chiefly of men at work, who cannot get away except in the evenings. It is therefore impossible to do more than discuss this problem in general terms.

(*a*) *Assistance from the regimental depot.*—Regimental depots can do much to help their affiliated Territorial battalions by organizing short courses of instruction—an excellent plan. The disadvantage to them is

that it so often happens the best Territorial N.C.O's are working and cannot get away for a week or ten days. It follows that unless care is exercised the majority of those attending the courses will be the professional "course-mongers" and the out-of-work N.C.O's, who will eagerly take the opportunity of spending a week or so in comfortable barracks with good food and pay. If they are good men and the battalion is to benefit from their instruction, the money laid out on them will have been well spent. The danger of sending the wrong men on these courses must, however, be borne in mind and guarded against.

Unless units are very scattered weapon training courses can be carried out satisfactorily in the unit's own drill hall, by means of evening classes. The writer has found that keen N.C.O's will attend these classes regularly and, in his opinion, as much value can be gained from them as from depot courses, which incidentally cost more money.

Section Leading, on the other hand, can be taught very much better out-of-doors, and as outdoor work is impossible on winter evenings, it is thought that courses in this subject should be held at the regimental depot; incidentally, it is suggested that courses at regimental depots should be confined to those subjects which cannot be taught satisfactorily within a Territorial battalion.

Another form of assistance which can be rendered by the depot is described by Major R. L. Sherbrooke in his recent article on "Regimental Depots,"[1] in which he says "Permission was obtained to send on leave the recruits and duty personnel for six days about August Bank Holiday and some 300 Territorial officers and other ranks were accommodated at the Depot." The idea is excellent and would appear to be both practical and of real advantage to Territorial units.

(*b*) *Attachment of regular N.C.O's.*—In addition to help given during the annual camp, regular units attach N.C.O's to Territorial brigades to hold classes in weapon training—including machine-gun training—section leading and signalling.

Generally speaking these classes are held during the winter months. All, and any, help from regular units is gladly welcomed, but as such help is necessarily limited, care must be exercised in determining when and how it should be given, in order that the maximum amount of benefit may be derived with the minimum expenditure of money and personnel.

Here one begins to tread on dangerous ground, for, through circumstances beyond their own control, some units require more assistance than others. No hard and fast rules can be laid down, but there are one or two guiding principles, which seem to be generally applicable.

[1] See R.U.S.I. JOURNAL for August, 1932, p. 575.

In the first place it must be remembered that all the permanent staff instructors have qualified at Hythe, and they should be some of the most efficient N.C.O's in the regiment. Between them they can deal with a class of sixteen, or where there are three such instructors, of twenty-four N.C.O's. Moreover, it is thought that there should be one or two Territorial N.C.O's who are capable of assisting them by taking squads of junior N.C.O's. The writer strongly advocates that this should be done, for it is only in this way that Territorial N.C.O's will ever become first class instructors.

Another factor is the question of suitable accommodation, which is available, since this must limit the number of squads under instruction at one time.

Accordingly, it is thought that a concentrated unit can run its own cadre courses without regular assistance, always provided that the organization be sound. Scattered units, however, will probably require one or two regular N.C.O's to help them out.

Machine gunners are no longer specialists, but let it be remembered that the machine-gun company is in its infancy. Moreover, there still exists a shortage of experts in most Territorial units, and regular N.C.O's are invaluable during the winter months to assist in training officers and N.C.O's as machine-gun instructors.

Lastly, there are the signallers to be thought of. Few Territorial units can do without the attachment of a regular signalling instructor for several weeks, who may come from the affiliated regular battalion or from the Royal Corps of Signals.

The time when Territorial battalions most need assistance is during the pre-camp training season. At this time of year the permanent staff has more to do than it can properly cope with. A battalion may have 100 recruits, or even more, all at various stages of training, putting in perhaps four drills a week before camp. How can the acting regimental sergeant-major and two permanent staff instructors deal effectively with so many? Critics will say "Make the Territorial N.C.O's help." But the Territorial N.C.O. is a working man already attending company parades and he cannot be expected to do more without pay—which is not admissible.

Consider the situation of a detachment. One permanent staff instructor (no more are allowed) visits it on drill nights. He may find twenty or thirty men on parade. Some are recruits and must be given arms drill. Some have to be instructed in the rifle; others in the light automatic gun. There may be several men waiting to enlist, and these the permanent staff instructor must attest. Very probably there is an

officer with only one or two Territorial N.C.O's on parade. Under these conditions, and they are not exaggerated, how can training be carried out successfully?

It will be seen then that help from regular units is urgently needed during the pre-camp training season. Conditions may vary, but as a general principle it is suggested that one, or more, regular N.C.O's—corporals would suffice—should be attached to each Territorial battalion for a month or six weeks before camp to supplement the permanent staff. These N.C.O's could usually be accommodated at the regimental depot, so that the expense would be negligible; moreover, at this time of year they could be spared by the Regular units.

Conclusion

To sum up. All help from the Regular Army is appreciated, but the moment when the Territorial Army most needs it is during the annual camp and during the pre-camp training period. It is suggested that assistance during annual camp should be given generously, but in order not to hamper the Regular Army training, it should be concentrated into one week, rather than that it should be spread over two weeks and prove inadequate. During camp the Territorial Army urgently needs officers to umpire and direct schemes, assisted by warrant officers and senior sergeants. The Regular Army should aim at supplying this want. Assistance during the remainder of the year must depend on the individual requirements of units. Depot courses should be utilised to teach those subjects, which cannot be taught satisfactorily in the drill hall. Regular N.C.O's should be attached to train specialists and to help with any large influx of recruits during the pre-camp training period.

In conclusion, it must be realised that any scheme for helping the Territorial Army must be elastic, since exceptional cases will occur, which will require special consideration. It is here that the Territorial adjutant can help. By keeping in close personal touch with his regimental depot, the home battalion of his regiment and with his brigade commander, he can smooth away many difficulties and ensure that his unit gets the kind of assistance most suited to its own particular requirements.

MISCELLANEOUS ACTIVITIES IN CIVIL AVIATION[1]

By Lieutenant-Colonel F. C. Shelmerdine, C.I.E., O.B.E.
(Director of Civil Aviation)

UNDER the designation of "Miscellaneous Activities" in Civil Aviation, I include Light Aeroplane Clubs, private flying, taxi and charter work.

LIGHT AEROPLANE CLUBS

To the Light Aeroplane Club movement must be attributed the rapid development in this country, during the last few years, both of private flying and of the light aircraft industry. The credit of conceiving and planning the original scheme for the foundation, with Air Ministry financial assistance, of a number of clubs at which the art of flying could be learned and practised at charges within the range of the purse of the "man in the street" is due to Air Chief Marshal Sir Geoffrey Salmond. The scheme was launched in July, 1925, and six clubs were approved to participate in it. One club was already in being, one was resuscitated and four new ones were formed. Initial grants of £2,000 each were made to the clubs to be spent in the purchase of aircraft and spare engines; £1,000 per annum for two years was paid to each club for the maintenance of this equipment; and in the first year up to a maximum of £1,000 was contributed towards the cost of crashes. In addition a bonus of £10 was paid in respect of each pilot's licence earned by a club member.

On their part, the clubs were required to conduct their affairs to the satisfaction of the Air Ministry, to provide suitable aerodrome and hangar accommodation, to employ qualified air-pilot instructors, ground engineers and mechanics to a number considered necessary by the Air Ministry, to permit inspection of their aircraft and equipment, to keep and permit inspection of their accounts, and to render returns concerning their operations as required.

The results obtained in the first two years of the scheme were reviewed, and in July, 1927, the arrangements for financial assistance were revised so as to base payments on results. The circle of approved clubs was

[1] This article formed part of Lieut.-Colonel Shelmerdine's Lecture on "Progress in Civil Aviation," delivered at the R.U.S.I. on 19th October, 1932. Owing to pressure on space it was unavoidably held over when the rest of the Lecture was published.—Editor.

extended and a three-year agreement was entered into by the Air Ministry with thirteen clubs, each of which could earn a maximum of £2,000 per annum in subsidy. £50 was paid for each new licence taken out by a member trained by a club; 30/- per hour up to 20 hours was paid for flights undertaken by licensed members and £10 in respect of each renewal of his licence by such a member.

In 1929, a new factor was introduced by the formation of National Flying Services, Ltd., whose objects were to establish internal air lines and air taxi services, to sell and maintain aircraft and to establish near London and at a number of provincial centres flying clubs for training and practice in flying. In return for a subsidy from the Air Ministry of £10 for the first three years (up to a maximum of £15,000 per annum) and of £5 for the next seven years (up to a maximum of £7,500) in respect of each licence issued or renewed to a member of an affiliated club, this company undertook to provide twenty aerodromes and eighty landing grounds in the United Kingdom within three years. Subsidised operations were commenced in July, 1929.

The subsidy to be paid to the company was on a very much lower scale than that paid to Light Aeroplane Clubs under the 1927 agreement, and it was consequently decided by the Air Ministry that on the expiry of that agreement the assistance to Light Aeroplane Clubs must be reduced to accord with that afforded to National Flying Services, Ltd. As from the end of July, 1930, a revised scheme was accordingly introduced for the clubs, providing for a grant of £10 in respect of the issue or renewal of licences to each member subject to a maximum of £2,000 per club per annum. The number of approved clubs was increased to sixteen and the terminating date of the scheme was fixed at 31st July, 1932.

Considerably before this date, however, it became apparent that clubs could not keep their heads above water with this reduced subsidy. Most of them had increased their flying charges to meet the reduction in subsidy, but it was found that a charge to members for flying of £2 per hour was the economic level beyond which increases tended to react seriously on membership, to reduce flying hours and thus put up the cost of flying to the clubs and generally jeopardize the position. The financial depression of 1931 and 1932 aggravated the difficulties of the clubs. As the result of urgent representations on their part, the subsidy grants nave been revised with effect from the 1st April, 1932, so that £25 is now paid in respect of the issue and £10 of the renewal of a pilot's licence up to a total of £1,200 per annum per club, and half those rates thereafter up to a limiting maximum of £1,500. The new agreement will be for a term of five years. The number of approved clubs is at

present sixteen, but it may be possible to admit a few more to the scheme when the results of the first year of operation under it have been analysed.

In 1925, immediately before the commencement of the light aeroplane movement, there were on the Air Ministry register 140 licensed pilots and 184 aeroplanes. At the end of 1931, 2,091 persons held private pilot's licences and 315 held public transport licences, while the number of aeroplanes on the register had increased to 924, of which 385 belonged to private owners—a class practically non-existent in 1925. In September last, the number of pilots' licences had increased to 2,700 and the number of aeroplanes to 1,034. This phenomenal increase in the number of pilots and aircraft can be directly attributed to the activities of Light Aeroplane Clubs the total number of whom, including those operating without Government assistance, was thirty at the end of 1931, with an aggregate membership of over 9,000. The movement has been taken up with enthusiasm in the Dominions and India and in some of the Colonies; it has also been copied in many other countries.

The average charge which clubs make for flying is £1 15s. per hour for solo flying and £2 per hour for dual training. The average candidate requires 15-20 hours flying in order to qualify for a licence. The cost to the clubs works out at approximately £2 15s. per hour for an average of 1,400 hours per annum. The charge to members is, therefore, actually less than the cost price and the balance (17s. 6d. per hour) has to be made up from subsidy, subscriptions and extraneous sources.

TAXI AND CHARTER WORK

The present year has witnessed a considerable increase in the volume of taxi and charter work and the commencement of express delivery by air. It is now possible to hire a machine carrying a pilot and two passengers at a rate of 6d. per mile, or 3d. per mile per passenger, and the experience gained this year indicates that there is likely to be a big demand for air transport at these rates. Before, however, the use of air transport in this country can come into its own and meet the demands for it, we must have more landing grounds. It is the established policy that the provision of new civil aerodromes and landing grounds throughout the country should be undertaken by private enterprise or local authorities and should not be financed directly by Government.

Up to date, twelve municipal aerodromes have been established at :—

Blackpool	Ipswich	Nottingham
Bristol	Leeds-Bradford	Plymouth
Cardiff	Liverpool	Portsmouth
Hull	Manchester	Stoke;

but many more are required. We look forward to the time when every town of any size will have its landing ground. Elaborate equipment, such as exists at Croydon, is not necessary, at any rate at first. All that is required is a safe landing ground, facilities for obtaining petrol and oil, a wind indicator and a telephone. We cannot expect any great increase in internal air transport until these facilities have been provided.

In connexion with the establishment of aerodromes by private enterprise, I would mention the aerodrome at Heston, where Customs facilities are available, and full facilities exist for repair work of all kinds; it is a shining example of what can be done. This aerodrome was established and is maintained by the enterprising firm of Airwork, Ltd., which has also extended its activities to Egypt by means of an Anglo-Egyptian company and is hoping for a further extension in Iraq by means of an Anglo-Iraqi Company.

JOY RIDING

Joy-riding, which has a distinctly educative value, and helps to create air-mindedness, goes on as it has done now for the last thirteen years. The year 1932 has seen an elaborate organization, known as National Aviation Day, organized and controlled by Sir Alan Cobham, which has toured very extensively throughout England, Scotland and Wales, giving demonstrations with many different types of aircraft and short passenger flights. National Aviation Day has aroused great interest throughout the country and has been of real value to the cause of Civil Aviation.

THE NATIVE PROBLEM IN SOUTH AFRICA

By JAMES STUART, formerly Assistant Secretary for Native Affairs, South Africa.

On Wednesday, 4th January, 1933, at 3 p.m.

COLONEL THE LORD AMPTHILL, G.C.S.I., G.C.I.E., in the Chair.

THE CHAIRMAN in introducing the Lecturer, said that he doubted whether there was anybody living who knew more about the native question of South Africa than Mr. James Stuart. He emphasized that this was not a question with which we were only remotely concerned. Everything which affected the welfare, prosperity and progress of the Dominions was just as much our affair as theirs, and, above all, anything that concerned the honour of the British flag was the concern of English men and English women wherever they might be.

Mr. James Stuart had been twenty-four years in the Civil Service in South Africa, and during almost all that time he had been concerned with the native question. The last post that he had held was Assistant Secretary for Native Affairs. He had brought to this country a deputation of six Indumas (chiefs) of the Swazi nation, who had an audience of Queen Victoria. Later on he received the surrender of Dinuzulu. Moreover, he was an interpreter in the Zulu language—a rare accomplishment in an Englishman.

The Lecturer before proceeding with his lecture, showed a number of lantern slides illustrating native life in South Africa, and also gave a rendering of royal praises in Zulu.

LECTURE.

THE subject of the Native in South Africa presents a problem which is about as formidable as it can be. Moreover, it is one which is becoming more and more intricate and burdensome as the years go by. Sisyphus was condemned to roll a stone up hill; this is our stone; and we cannot console ourselves with the idea that it may be left to rest on the shoulders of men six thousand miles away. We are all members of the same Commonwealth of Nations, hence we must all share this burden.

Again, let me point out that these natives, with whom the South Africans of our civilization live in permanent contact, as rulers, are themselves Africans. Also, this great problem is not confined to the continent of Africa, but, in a sense, concerns all coloured races, because it is essentially part of the problem of the human species itself.

Nevertheless, formidable and complex though it is, the nature of the problem and the circumstances which brought it about can be described in simple language.

The Dutch, in 1652, were the first Europeans to settle in South Africa, but as they did not penetrate further than the Cape peninsula, it was many years before their influence was felt by the somewhat distant Bantu tribes—by far the largest and most important group of barbarians in Africa. Indeed, it was not until the advent of British rule towards the later XVIIIth century that real and extensive contact between Europeans and natives became evident. I do not propose to dwell on the history of those relations, of the system of apprenticeship of natives practised among the Boers, or of the various wars that rose in consequence of native resentment towards their first white rulers. Suffice it to say that Natal began to be occupied by British settlers in 1824, and the Orange Free State and the Transvaal by Boers about 1837, i.e., subsequently to the Great Trek. The Boers clashed almost simultaneously with the Zulus, under Dingana in the South, and the Matabele under Mzilikazi in the North. The Cape of Good Hope finally became a British Colony in 1806, and Natal in 1842, after which contact with the Bantu races in the eastern parts of Cape Colony, in Zululand, Basutoland and Swaziland, rapidly developed and became closer. As a result of this impact with western civilization other wars broke out, notably in 1879 when the Zulus, by far the strongest savage force in South Africa, were signally defeated. In these and other ways both British and Boer Governments gained complete ascendancy over the Bantu races, to say nothing of the Hottentots, Bushmen and other aborigines; a process which, by 1900, had extended over Southern and Northern Rhodesia, Basutoland, Bechuanaland and Swaziland.

It was, of course, this process of colonizing, and especially the laying off and occupation of farms, which mostly affected native life. The establishment of towns, missionary operations and commercial enterprise were other influences, all of which began to make themselves felt by the natives far and wide with ever increasing penetration and intensity. It was in these many and diverse ways that those contacts with western civilization first came about which gave rise to what is known as the Native Question or Problem.

So we see two European peoples, themselves of sharply contrasted types, warring with and subduing the various tribes, then setting out systematically to cut up and occupy land formerly in the possession of the aborigines. Western civilization came into conflict with pure barbarism; but, when defeated, the barbarians continued to live in close contact with their foreign masters and gradually they learnt

the language of their new rulers and adapted themselves to novel and strange conditions. Yet they continued to be different from the Europeans in countless ways; they still adhered to their native religion, social customs and habits; their own systems of culture, land tenure and cultivation; their modes of warfare; their language, history and traditions; and their superstitions, ideals and aspirations. In these circumstances there naturally arose the fundamental question—how to regulate the relations between the native and the white man. What would be the wisest and most reasonable *modus vivendi?* On what principle were the natives to be governed? through their own institutions, and in accordance with their own hereditary ideas and instincts; or were they to be made to conform to European laws and practices as strictly as Europeans themselves? Were they to be compelled summarily or gradually to change their customary modes of living; were they for instance to be made to practise monogamy instead of polygamy; were they to discard their laws of inheritance in favour of ours; to live under a system of an individual instead of a communal land tenure; to embrace Christianity and abandon belief in ancestral worship, divination and witchcraft; to cease to live in rude wattle and grass huts, adopting in their stead habitations constructed on European lines; to wear European dress in place of that customary for ages among themselves? Or were they to be left to live just as they had done hitherto? If there must be changes, how and to what extent were these to be introduced? Taxation, of course, would be necessary, but what forms should it take, and what of the capacity of the people to pay? Was the native to be granted the franchise or not; in either event, how were his interests to be represented and safeguarded in a European Council or Parliament? It will be seen that the whole problem literally bristled with subsidiary problems, each shot through and through with pros and cons of its own, which only became more difficult to cope with the more the people assimilated European modes of living. Thus, like Jason, the several Governments had to be prepared to fight and defeat new difficulties as speedily as they sprang up from the field which they had themselves ploughed. Such was the situation nearly a century ago, and such is the situation to-day, except that it has become far more involved, and, therefore, far more difficult to handle; from the seed originally sown, came "first the blade, then the ear, and now the full corn in the ear."

The Government might, of course, adopt the attitude of the former Boer Government, and take the view that, being mere *schepsels* or animals, natives must, in the Old Testament sense, remain "hewers of wood and drawers of water" to the ruling race. This might conceivably simplify the problem of control, but it would be the

simplicity of a policy of sheer despotism. The Native Problem properly derives not from the Boer but from the British ethos, yet there remains, and probably long will remain, radical differences of opinion between the two European races on the principles of native government and administration. That opposition, stubborn and deep-rooted, alone reveals how unprecedentedly complex the thing is. In consequence of a so-called Union, there is now a mixed or blurred ethos controlling the natives, imposed intermittently and irregularly according to the vicissitudes incidental to party government.

Now it is necessary to realize quite clearly that by far the greater number of Europeans have gone out to South Africa primarily for their own individual interests; not as philanthropists or missionaries. The vast majority are there to make their fortunes or, at any rate, to earn a living, not in any illegitimate way, but in accordance with the ordinary mercenary spirit of the age. There is, of course, a certain though small percentage actuated by entirely different motives, as for instance the missionaries and clergy of various home and foreign churches; men of means in search of health; and others whose presence in the country is explained solely by the fact that a European population is already in residence, and, therefore, requires such services as those of doctors, tradesmen, educationists, lawyers, bankers, skilled workmen, entertainers and so forth. These latter have little or nothing to do with the natives, their functions being for the most part confined to the European inhabitants. But the European community requires other services, and because the native population almost everywhere greatly outnumbers that of the white settlers,[1] and because native labour is unskilled and more readily procurable, and therefore cheaper, the practice of employing natives as domestic and outdoor servants has become general—except where the work can be done more effectively by the quicker and often more intelligent Malay or Indian. One of the consequences of this state of affairs is that in many parts, if a European wishes to employ white servants considerable difficulty is experienced in procuring such servants and retaining them, owing to the loss of status through their having taken positions customarily filled by natives. In this and other ways, therefore, natives automatically tend to oust the lower classes of Europeans from work which, in other countries, would inevitably fall to their lot, forcing them to seek employment in other directions.

[1] The officially estimated population of the Union of South Africa to-day is 8,250,000; of this, the European element numbers nearly 1,900,000. The non-European population (consisting of natives, Asiatics and half castes) is about 6,500,000, of whom 5,500,000 are natives. That is to say, natives alone outnumber Europeans by three to one.

But there are other fields in which the native has, through force of circumstances, supplanted the white man. In England, Scotland and Wales, all phases of mining operations automatically fall to European labourers; not so in South Africa, where industries such as gold mining, diamond mining and coal mining have already been enormously developed and therefore call for scores of thousands of labourers. In these connections the rougher unskilled work both underground and on the surface is undertaken by the native. Here again, the European labourer is at a disadvantage because it is considered derogatory to work side by side with the native. Recently natives have begun to compete even in skilled labour, and there does not seem to be any effective means of reserving such work to European artisans, apart from legislation, which, because it means discrimination, straightway raises an outcry amongst Europeans as well as natives.

The same story can be told of natives living on farms. The farming industry of South Africa to-day is of colossal proportions. Among the principal agricultural industries are sheep farming, cattle farming, fruit growing, and the cultivation of grain and wattle bark. With few exceptions, natives are employed to do all the rougher manual work, also the sheep-shearing, harvesting of crops, transporting produce to markets and so on. Without going into statistics, it will be obvious, therefore, that the native is making deeper and deeper inroads in the foregoing fields, and that the economic prospects of the white labourer have become altogether different from what obtains in England, to say nothing of the rest of Europe; a situation which naturally gives rise to considerable apprehension.

In touching on the economic aspects of the situation my intention has been merely to throw light on some of the roots of the problem. In this particular connection, the difficulty is how to safeguard European labourers without unduly interfering with the legitimate aspirations of the natives, especially those of them who, having profited by such experience and training as may have come their way, can fairly claim to be regarded as skilled, and who, not unnaturally, look for privileges, opportunities and wages similar to those of skilled Europeans. Here is a thorny point indeed, and one which raises the question of the native problem in relation to the teachings of Christianity. Yet,while striving to do justice to the native, we are bound to be fair to members of our own race. Already the latter find their field of labours restricted, and in some way they ought to be protected; if only because the native has acquired practically a monopoly of all lower grades of employment. A policy of setting up a colour bar ought, therefore, to be viewed not so much as being intentional discrimination against the black man, but as

conserving to the white labourer rights to which he is, in equity, entitled in his own areas, especially as he is debarred from competing with the native in native areas. The skilled native on the other hand, has the right of seeking employment in large and well populated native areas, even if the demand for his services in these areas be as yet small, that is no valid argument against his striving to make a living amongst his own kith and kin. Obviously, if such areas as these are ever to have skilled labour of their own, the natives themselves must make the beginning. Why should the missionary spirit of self-sacrifice be always looked for solely in the white race?

I turn now to another aspect. If the white man has come to South Africa in his own interests, and he was quite justified in doing so, then it is right that he should make the best of his opportunities. Although our civilization is higher than the system under which the aboriginal races in South Africa lived and still live, it is unfortunately the fact that among us there are some who are unscrupulous in their dealings with others. Such individuals are, of course, to be found in every civilized country. Gifted with greater intelligence, cunning and crookedness than the unsophisticated African, these members of our race, though far from being confined to our nationality, very early took advantage of their position to exploit the native in every kind of way, and this unholy exploitation has persisted down to the present time. It has been, and is, very prevalent in large towns such as Johannesburg and Durban, and also in many other towns and villages throughout South Africa. It is no use trying to disguise this fact. It is there, and I could adduce many unsavoury examples of it. To us in London they may sound like fables, but to the native they have been the real calamities and real hardships incidental to the white man's rule. I do not wish to give the impression that the European inhabitants of South Africa are all rogues and scoundrels; they are not. But we have "black sheep" just as there are over here, and it is these men who give a country a bad name. A very small number of them roving about among simple barbarians can work mischief over wide areas in a remarkably short time. Again and again each Colony passed legislation with the object of suppressing these evils, and since the Union came into being in 1910, the same action has been vigorously and repeatedly taken. Magistrates and police have loyally and consistently done their duty in towns as well as in the country districts; but when one realizes the undeveloped mentality of natives as a whole, their gullibility and liability to deception in a thousand ways, and the countless opportunities for unprincipled persons to cheat simple-minded folk, it will be evident that it is extremely difficult to eradicate completely these evil practices. To name but a few of them: there is the illicit sale of liquor,

money-lending at extortionate rates of interest, gambling, immorality, fraud, and robbery with violence. Crimes such as these, occurring chiefly in towns, tend to cultivate a spirit of independence and lawlessness in the more youthful sections of the people. Year after year, many thousands of natives leave their homes in the reserves to earn money in towns for paying governmental taxes, rents, etc.; when there, many become contaminated by depraved Europeans and others, and break away from their homes. Once released from tribal control and its many salutary influences, there is but little left to control them. They succumb, and themselves become as iniquitous as their criminally-minded instructors. Now, this steady and increasing drift towards the towns is of itself one of the major evils of the day. In the words of the recent Native Economic Commission, 1930-1932: "It has assumed such a magnitude as seriously to disturb the European mind, and to create grave problems of urban housing, administration, and native morality." One of the most important causes of this drift is traced to the undeveloped state of the reserves.

With the passing, many years ago, of the Zulu, Xosa, Tembu, Pondo and other kings and paramount chiefs, minor chiefs were, within certain limits, appointed to control their respective tribes or clans, in each case under the supervision of a European magistrate or commissioner. Under the tribal system, still widely in vogue in South Africa, though fast becoming disintegrated, chiefs are indispensable. But, owing to the increasing drift of natives to towns and to gold and other mining centres; also on account of the spread of education; and of the exemption of natives from the operation of their own laws, these chiefs are rapidly losing their power and influence. The result is that their tribes are less satisfactorily controlled than was formerly the case. Youths and others, filled with the spirit of independence, often flout and defy them. Realizing the danger of undermining their powers, the Government has, from time to time, introduced legislation in support of their authority. Such measures, however, are but temporary and ineffective expedients, for apparently nothing can withstand the onward march of the people, good or bad, and the consequent dissolution of the old order.

The outstanding effect of the coming of Europeans to South Africa and of their domination of the entire sub-continent, has thus been the breaking down of the various traditional systems of native life and government. These disruptive tendencies, however, have not been catastrophic, but gradual; not direct, but indirect; and one and all sprang out of the incoming civilization and, of course, actually out of the character of the people bred by that system. After all, it is not to western civilization as such—a mere abstraction—that the havoc re-

ferred to must be attributed, but to what it stands for, that is, essentially the character cultivated in its members by that system; for any given form of civilization necessarily makes contact with other personalities and systems solely through individuals, be these officials or missionaries, farmers or storekeepers, police or soldiers, or ordinary citizens, male and female.

Many of the worst evils we find in natives are definitely of our own making. Our civilization is itself at fault. As individuals, we South Africans are far too absorbed in countless materialistic and sporting pursuits to concern ourselves with the material, moral and spiritual progress, good or bad, that the native is making. We console ourselves by saying it is a government and missionary affair. And yet the government can, after all, do but little through its officials, its mixed police and educational systems, and still less, of course, through its military forces. The missionaries,[1] on the other hand, do really address themselves to the task. Many take a broad view of the position and, though primarily engaged in evangelization, also devote attention to secular development, education, agriculture, domestic duties, and so on. Because they associate themselves in this way with what are really the functions of the government, they are entitled to public financial support, and that on a much more liberal scale than they are wont to receive. That they have made mistakes, and some bad ones, is undoubtedly true; but, with all their faults, they, more than any other section, not excluding the Government, have made two blades of grass to grow where only one grew before. They have long been, and are now, in the act of shouldering the "white man's burden," which should emphatically rest on all our shoulders.

It has taken many years for the existing situation to mature, and, having done so, it may be said to menace not only the natives' traditional modes of existence, but also our prestige and, perhaps, even our continued ascendancy in South Africa. It has, therefore, become urgent to grapple with and solve this problem, intricate as it is, in the most just and statesmanlike manner of which we are capable.

One highly significant step in this direction has already been taken by the passing of the Land Administration Act of 1913, which laid down the principle of territorial or possessory segregation. Speaking in December, 1925, of the native areas contemplated by that Act, General Hertzog said: "These areas will never become the independent and semi-independent states of which some natives sometimes speak. [They]

[1] The very first of these in South-Eastern Africa was Allen Francis Gardiner, of the Royal Navy. Leaving England in the "Wellington" in 1834, he reached the self-chosen fields of his labours—Natal and Zululand—in January, 1835.

will be under the leadership of the Government, more or less on the lines of municipalities or divisional councils amongst Europeans, with defined rights and responsibilities. Then there will be further a Union Native Council, which will . . . be charged with very responsible duties, . . . what may be described as the natives' parliament."[1]

Many years ago, each of the South African colonies set apart large reserves for the exclusive occupation of its natives. Owing to growth of population these reserves—always insufficiently developed from a white man's point of view—are now becoming congested, with the result, as already remarked, that natives are drifting in disconcertingly large numbers towards the towns. In this connection, the recent Native Economic Commission observes: "To develop the natives, and the reserves; to make the dead hand of tribalism relax its grip; to convert tribalism into a progressive force; to set the native mass in motion on the upward path of civilization, and to enable them to shoulder the burden of their own advancement—such must be . . . the main approach to the solution of the Native Problem in its economic aspect."[2]

I cannot, of course, say what the Government intends to do. If they act, it will probably be on the lines of the Glen Grey system, initiated by Cecil Rhodes, as subsequently modified and applied on a large scale in the Transkei. But that system needs to be improved and reinforced by the light of recent experience. For instance, what are known as farm demonstrators are required to instruct plot-holders in the principles of dry farming; and, perhaps, agricultural training should be provided for in secondary schools. But, apart from all this there is the question of finally smashing the tribal system as it still exists in its last retreat—the Reserves.

If the recommendation be carried out, this would inevitably follow, not catastropically, of course, but gradually. If, for economic reasons, this came about all over the Union, it might well cause friends of the native and of the white man, to pause and think. Personally, under the very special, pressing and abnormal circumstances, I would reluctantly favour the proposal, but would endeavour to secure and retain the goodwill and co-operation of every native at every stage of the journey.

Now, human nature is so constituted that, when it finds itself up against a stupendous difficulty through which it cannot see its way, it begins furtively to turn its attention to attaining its ends by force. War, it is said, is the final arbiter. I, personally, do not see why that should be, because I think our intelligence, will and spiritual power,

[1] Report, Native Affairs Com., 1925-26, p. 17.
[2] Report, Native Economic Commission, 1930-1932, p. 12.

properly and calmly exercised, ought to be sufficient to circumvent any situation that can arise. Certainly nothing is more complicated and ominous than what we are now concerned with. The Government, I may say, is always prepared to take steps to correct or mitigate a grievance, as far as they can, and this, not only in the interest of the white man, but also in that of the black. Governments, no doubt, are not always of the same type; sometimes they are generous and sympathetic, sometimes harsh and repressive. It is true that certain Acts, such as those relating to the Colour Bar, to Passes, and to Land Administration, have excited a considerable amount of criticism and dissatisfaction among the natives. But outsiders should always bear in mind that there are two sides to every question; although our compatriots in South Africa may sometimes appear to be hard on the native, they are not necessarily at fault in whatever they attempt in that connection. I do not say that I agree with all the provisions of the Colour Bar Acts, but I do realize that, in consequence of ever-increasing competition, between skilled black and white labour, it is imperative that the crisis which has arisen should be dealt with, and, nothing is clearer to my mind, after a long experience, than that all native legislation, even the harshest and most unconscionable is fundamentally tentative and, therefore, temporary, even if at the moment it is declared to be permanent. I know that one political party is deemed to be harder on the native than the other; hence, if really repressive measures were, at any time, imposed by that party, the sense of fair play in the ordinary voter would, as soon as the turn of his own party to assume power arrived, either abolish or amend what he felt to be unjust and not intended to be merely educative. Thus the process of solving the Native Problem would be, as it has always been, a *solvitur ambulando*. Apart from all this, if the natives are wise, they will, I think, loyally and cheerfully accept the proposed areas as being potential training centres within which, with the already proffered assistance of the Government, they can set about gradually to uplift one another in civilization. In course of time, and it need not be long if they are in earnest, they will so develop that the Government will find it impossible to resist demands for rights and privileges corresponding to the higher status achieved.

Were hostilities, for any reason, unfortunately to break out between Europeans and natives, the available local forces should be as capable of dealing with and suppressing them as, for instance, the Natal Militia did in 1906, when there was the formidable Zulu rebellion in Natal and Zululand.[1] I served throughout that campaign and its sequel in 1907,

[1] See "The Union Defence Forces of South Africa," p. 744 of the JOURNAL for November, 1930.—EDITOR.

and can, therefore, speak with the added experience of active service. But I have no wish to talk about war and war's affairs. In South Africa, the white races are, or ought to be, trustees and protectors of the natives, not their exploiters; their fathers, not task-masters or aliens; sympathetic educators, not callous onlookers. The days of pirates and freebooters, of lawless adventurers and slave-traders have gone by, and, in the more pacific age in which our lot is cast, steps should be taken to introduce and subvent the arts and industries of peace, for " peace hath her victories no less renowned than war."

The natives deserve and are entitled to receive the Europeans' kindly regard. The vast majority are, in their own country and natural surroundings, honest, hospitable, cheerful, loyal, courageous, courteous and dignified—people with whom one can make friends and thank God for having them as companions. They, of course, require to be understood, but anyone familiar, as I happen to be, with their euphonious and expressive languages, especially Zulu, and possessed of a modicum of humanity in his nature, can soon win and keep a place in their affections. It is true they have failings, as what mortal that has not; but notwithstanding them, they are a very valuable asset to the country and, as such, worthy of being treated with consideration and respect. It is true they are now not quite what they once were; but who is to blame for that? The white man. Our duty, therefore, is to strive to undo the mischief we have wrought by cultivating a more sympathetic interest in them and assisting as much as possible to better their lot. They certainly have as much right to be in South Africa as we have; indeed, I am not sure that their right is not superior to our own. But, taking the position as we find it, are we not justified in describing the white and the black people, as a noble-minded African, Aggrey, recently did, as being as necessary to one another as the white and black notes on the keyboard of a piano? As they have been ordained to dwell together, so they ought in every way to co-operate with one another, each in his own way, in " weaving the living robe of Deity." There is no fable which South Africa ought to take more to heart than that of " the belly and the members." Whatever the European may say or do, the native is a necessary and integral portion of South Africa; therefore, the interests of South Africa would be best promoted by the members—i.e., the Europeans—acting in hearty reciprocity with the aboriginal natives. By acting in large-hearted co-operation with one another, instead of strife and adversity, there would be peace, welfare and prosperity throughout the land.

In conclusion, I come to a topic which I feel I ought also to touch on. I have already tried to make it clear that the Native Problem

is a serious, menacing and practically world-wide affair. Imagine, then, my feelings on seeing what goes on here in London; though not only here—how coloured people from all parts of the world are, in ever increasing numbers, received into English society, welcomed by English families and publicly fêted and entertained by philanthropic and other bodies. It is enough for a black man to don a new suit of clothes, instead of a scanty loin-dress and leather-trappings, to be booted instead of bare-footed, and to wear a pair of gloves and carry a walking-stick, instead of a shield, knobkerrie and assegais, for him to be admitted into English drawing-rooms and invited to make himself at home. It is nothing to his host and hostess or their daughters that, a few months later, this guest will be back in his own polygamistic surroundings, and that with European garments cast aside, he will be rushing off in the scantiest garb to every available beer-drink, witch-doctor's "smelling-out" performance or faction fight within reach. They like the novelty of their visitor's unusual appearance and feel a certain self-satisfaction in welcoming an African brother. There are, of course, different types of African men and women, some more educated and civilized than the others; but, even so, few are as yet qualified to be introduced into European society. It is not merely a matter of colour or racial prejudice, but a question of the wisest means of developing and uplifting the man himself in the midst of the snares and dangers of a civilization alien to his own. The listless attitude of which I complain, and the seeming absence of policy or active friendly concern in regard to this problem, will, if not remedied, one day inevitably react on Great Britain. In a question of this kind, it is not enough for such visitors merely to satisfy the medical, immigration and police authorities. African coloured people, by living in England just as they choose and for practically as long as they like, have a lot of difficulties of their own incidental to the new conditions; for instance, funds run out, which obliges them to live in the slums of London and other great ports, and associate with the lowest types of men and women. There they learn bad habits and imbibe all kinds of ideas, which, when they return to their own countries, are in many cases used to prejudice the minds of their countrymen against the colonists and their Governments, to cultivate unfriendliness between them, and so materially increase the difficulty of the Native Problem. Because of this, the Problem becomes still more of a problem than it was. Is that right? Is it fair to our compatriots in South Africa as well as in other parts of Africa and the British Commonwealth of Nations to make their burden heavier than it is? I do not want to be unreasonably hard on coloured visitors to these Islands (I wonder if Parliament has ever called for statistics about them, there must now be many hundreds in London alone), but I do wish to sound a note of

warning, for I am afraid that, unless something be done, some closer supervisory responsibility accepted and exercised, the relations between the Dominions and Colonies and the Mother Country will not be all that they ought to be; nor, in the long run, I fear, will the interests of the natives in the Empire overseas be much improved.

So, we see, England is still intimately concerned, not only with the destinies of the backward races of the world, but, what is even more important, with the very policies followed by self-governing members of her great Commonwealth in regard to those races. She has a sacred duty to perform, both to the coloured peoples as such, and to those of her own blood or civilization across the seas. Rather over a century ago, it was the abolition of slavery that stirred her conscience and sense of justice. Then her course, if difficult, was clearer, less fettered than it is now; then she had to be convinced of the necessity of assuming a higher attitude and playing a higher rôle to right the wrong. Now, both she, and still more South Africa, must be convinced of the necessity for holding still higher ground, and for being animated by an even purer resolve, if, conjointly, they are fully to perform their duty to the subject peoples. For their common task is no other than to co-operate freely and whole-heartedly with one another, as well as with the coloured races, to bring about, gradually but surely, a true renaissance.

DISCUSSION.

MR. THOMAS GEORGE ROWE: As one who has worked for many years in Natal and Zululand, may I thank the lecturer particularly for his most excellent remarks on the difficulties relating to Zulus and others coming to London, or, in fact, to any European city. I should like to ask him whether, in his opinion, the Native Department is well backed up by the governments concerned. Do the governments give the paramount chiefs all the support that they should receive, particularly from the administrative point of view.

LIEUT.-COLONEL JONES: The lecturer mentioned the differences between the Dutch and English civilizations with which the native is in contact. Could he tell us a little more about the differences between the native civilizations? There is the Bantu race, which, I understand, is of a much higher type than the Hottentots and Pondos, and then, again, we have the still more inferior type, the Bushmen. Could he tell us a little more about their relative stages of civilization or barbarism? So far, I think, we have heard chiefly about the Bantu race.

ADMIRAL SIR DOUGLAS NICHOLSON: I should rather like to learn from Mr. Stuart what is the present intention of the Government with regard to the tribal system. Is it the intention to maintain and develop it—or should I say restore it?—or is it the intention gradually to merge the native community into what for want of a better term, we may call modern civilization?

THE LECTURER:

The answer to the first question as to whether the Native Department gives all the support it can to chiefs is that I think it does. That Department and the

magistrates have, of course, to enforce the laws and regulations, the latter being, for natives, almost as important as the laws themselves, because they affect them more closely.

I did not deal specifically with each of the different races—Bushmen, Hottentots and so on—because it would have made the lecture too long; but the Bantus are the backbone of the Problem, so I confined my attention to them.

As to the intention of the Government in respect to the tribal system: I cannot speak officially, but only as an old colonist formerly in the Native Department. The Government certainly desires the *status quo ante* to continue in the native Reserves, for such obviously is the underlying motive of the Land Administration Act. Owing to increase of population, congestion in these Reserves will have to be met by a system of closer settlement which, because it involves various changes, is bound further to undermine the tribal system. A dilemma has thus arisen. The best way out seems to be to introduce closer settlement, although only as the system is applied for by the natives themselves. We had chiefs here in England ages ago; they have disappeared. Where, to-day, are the Scottish chiefs and the powers they formerly exercised? It was the march of civilization that wrought the change.

THE CHAIRMAN:

I think I may say that Mr. Stuart has given us a very fine essay on this extremely important and interesting problem, and shown that he is a man who has a sense of mission, of vocation, in this matter. Listening to him, I could only hope that he has been succeeded by other officials in South Africa who are equally far-sighted, broad-minded, and sympathetic, so that our statesmen in that Dominion may continue to have such advice as they must have had from Mr. Stuart while he was in office. I think we have all been impressed by the very high plane from which he approached this subject, and without treating us to any sentimental or impossible notions, he did show that there is room for the deepest sympathy with the native races and for the fullest recognition of their undoubted rights.

The customary votes of thanks to the Lecturer and Chairman were carried by acclamation.

THE JAPANESE ARMY

By LIEUTENANT-COLONEL J. W. MARSDEN.

DURING the seven centuries of feudalism prior to the "westernization" of Japan, which began over seventy years ago, military service was the exclusive privilege of the feudal lords—*Daimyo*—and their gentlemen retainers—*Samurai*. Swords which had been kept bright by generations of civil war were turned to their country's service at the restoration of the Imperial House, when the former rivals became the nucleus of the new naval, military, and civil departments of State.

With the enforcement, in 1875, of the Conscription Ordinance drawn up two years previously, military service was made compulsory for the whole nation, the officers being recruited from the feudal establishment, although the navy was recruited on a voluntary basis. At first there was considerable opposition on the part of the *Samurai*, who resented the intrusion of baser elements into the honourable profession of arms. This opposition was ultimately overcome after some bloodshed by an appeal to patriotism. Harmony between all classes was thus restored, and has remained without serious disturbance to this day. Paradoxical as it may seem, conscription in Japan serves a democratic purpose, for by throwing together all classes of society in the intimacy of barrack life a constant interchange of thought and feeling is forced upon the community. Military discipline though strict is not harsh or unjust and, as the officers have a high sense of their duty to their subordinates, a good feeling exists between all ranks. The nation is proud of its army, while the respect in which the latter is held has the double effect of strengthening foreign policy and of acting as a moral counterweight to possible social unrest at home. As a public servant the army enhanced its prestige in the earthquake of 1923, when the stricken areas were placed under military control, by undertaking the dual task of maintaining order and of assisting the sufferers in the chaos that prevailed. This episode is a striking testimony to the moral effect of the presence of a disciplined force, in an unprecedented national calamity, in reassuring a panic-stricken population by its calm efficiency.

The creation of an army on western lines had originated under French auspices; but the subsequent rise of Germany to the predominant

military position caused her army to be taken as a model, and a German military mission was invited to instruct the Japanese Army. Since the Great War the military air force has been reorganized by a French military air mission; and although some modifications of the German army system were made as a result of the experience gained in the Russo-Japanese War of 1904–5, the Japanese army still bears strong affinities with the pre-War German army in its organization and in its general tone and outlook.

The readiness with which the Japanese copy from other nations what best suits their needs is proverbial. There has been considerable activity since the Great War in studying the latest tactics and equipment, leading to a desire for reforms in these directions. Post-war conditions have brought into prominence two other pressing needs, namely financial economy and the requirements of foreign policy, calling for a re-adjustment of peace strengths and a redistribution of peace formations.

It is not proposed to discuss controversial questions of foreign policy; but as the organization and distribution of an army is unintelligible without considering the military policy behind it, a brief examination must be made of what rightly or wrongly appears to be the line of reasoning adopted by Japanese soldiers.

Apart from the immediate and obvious primary duty of national defence, the idea underlying the organization and peace distribution of the Japanese army is the protection of Japan's vested interests in Manchuria, with which is coupled Mongolia, the phrase "Manchurian and Mongolian question" being a well-established *cliché*. It may be mentioned in passing that the recent expedition to Shanghai was a side issue, though a costly one, the troops being withdrawn as soon as the task was accomplished. Manchuria is the major issue, and the Japanese have made it pretty clear that their motto here is "*j'y suis, j'y reste.*"

Debarred from outlets for her surplus population in other parts of the world, Japan's attention is, perforce, concentrated on that part of the Asiatic continent contiguous to the homeland. The military authorities have never encouraged migration away from the Japanese flag for fear of losing a valuable and enterprising portion of the population through alienation. A nation which prides itself on its patriotism cannot view with complacency the naturalization of its subjects to an alien race. At the same time, climatic conditions on the Asiatic mainland and the presence of a large native population of Koreans and Chinese, whose scale of living is inferior to her own, are serious handicaps to extensive colonization. Consequently, it seemed preferable merely to obtain economic control of these territories by investment of capital in railways and other enterprises with a view to developing the natural

resources of these countries for the use of the congested population at home, and to provide raw material for Japan's industries. Leading economists are now devoting their attention to the possibilities of Manchuria as a field for colonization since, owing to Japan's enormous birth-rate, her population has reached saturation point. A plan which finds favour is collective emigration of carefully selected stock organized on a semi-military basis under government control on the lines adopted in the colonization of Hokkaido in 1882–1896. It is argued that this plan has the advantage of being cheaper than the maintenance of a large garrison. It is estimated that to settle 50,000 families would cost 25 million yen, say £2,500,000. Against this expenditure must be set off the cost of unemployment relief if these families stayed in Japan. According to recent reports some such scheme is already being tried, a body of soldier-farmers having arrived in Manchuria with spade in one hand and rifle in the other.

To guard these interests and to safeguard the homeland against invasion her outpost is the garrison on the South Manchurian Railway, supported by a garrison in Korea, the main body being the home army in Japan itself. Japan has thus come to regard Manchuria as:—

(1) a field of investment and financial enterprise;
(2) a source of raw materials;
(3) an outlet for surplus population;
(4) a screen to secure Korea.

Similarly Formosa is regarded as another outpost forming a bulwark against aggression from the south, while its garrison also protects the peaceful inhabitants from the savage tribes in the interior of the island.

So much for the *raison d'être* of the huge military force whose upkeep Japan considers vital to her existence.

Let us consider the organization of that force, which shares with the navy the duty of defence. It is laid down in the constitution that the Emperor is supreme commander of all the fighting services in peace and war. Under him is an advisory Board of Marshals and Admirals who are personally selected. There is in addition a Supreme War Council comprising this advisory Board and containing as *ex-officio* members the ministers and chiefs of the general staffs of the army and navy with a few other distinguished military and naval officers nominated by the Emperor.

The ministers of the army and navy are officers of their respective arms and are members of the cabinet. An apparent anomaly in the constitution is the direct access to the throne enjoyed by the chiefs of the military and naval general staffs, who can thus "short circuit" the

cabinet. The army has always insisted on this privilege, and being the senior service, can sway national policy in a crisis. Although military officers are generally prohibited from openly interfering in politics, several public meetings were addressed by important officers early in September, 1931, urging a strong policy in Manchuria. Military opinion carries great weight, so the speeches seem to have had the effect of rousing the nation to support the action that has been taken in presenting the world with a *fait accompli*. Following suit, the navy attempted an unsuccessful *coup de main* at Shanghai, which necessitated the despatch of an army to rectify the situation.

The authorities are reticent as to the organization of the fighting services, and only sufficient information is divulged for passing the estimates through the Diet or for arousing public interest. It was considered an innovation when in 1919–20 the War Minister made a public announcement as to peace strengths. All details regarding mobilization are kept secret.

The highest unit in peace time is the division. For some years prior to the demand for reduction in armaments that followed the Great War, efforts were made to obtain a total of 25 divisions. By 1922 a nominal strength of 22 divisions had been reached, in addition to the Formosan garrison and the troops guarding the South Manchurian Railway, but in that year each division was reduced in strength, and by 1925 the above garrisons had been absorbed and the number of divisions reduced to 17. At the same time colour service was reduced by six months. The figures were announced as approximately 15,500 officers and 200,000 other ranks. Some increases were subsequently made in equipment, notably of artillery, machine guns, aircraft and tanks. Chemical warfare also came in for special attention. This organization comprises a military air service, there being no independent air force.

In making his report to the League of Nations in September, 1931, the Japanese delegate claimed that the army was now 65 per cent. of its pre-war strength, or 28 per cent. of the entire population. He stated that Japan was behind the other nations in weapons and air equipment; these deficiencies she was endeavouring to make good, and it was hoped that the Disarmament Conference would consider the state of Japan's armaments and her special position in the Far East.

With the exception of the Guards Division, two divisions in Korea and some technical troops, recruiting is on a territorial basis. Each division bears a number and is named after the station in which its headquarters are located. The 13th, 15th, 17th, and 18th Divisions were abolished in the reduction already mentioned, but the numbers of

the existing divisions have not been changed. The divisions numbered 19 and 20 serve in Korea.

The organization of a division varies according to the conditions for training, accommodation, etc. It is hardly correct, therefore, to speak of a typical organization,[1] but the general outline is somewhat as follows:—

Infantry:	two brigades of two regiments each;
Cavalry:	one brigade of two regiments;
Artillery:	one brigade of three or more regiments, heavy and light artillery mixed according to circumstances;
Engineers:	one battalion;
Commissariat:	one battalion.

Telegraph, railway and aviation units, as well as anti-aircraft, mountain and coast artillery are distributed among the various divisions. There are two tank regiments, one of which is allotted to a line division and the other to the infantry school. There is also a special corps of military gendarmerie.

Under the conscription system, which applies only to Japanese and not to Koreans or Formosans, all able-bodied men between 17 and 40 years of age are liable for military service. This duty, though irksome, is generally accepted without demur. Normally all males on attaining the age of 20 undergo an examination, and from those who pass as Class I the annual contingent is taken by lot. Those who are fit but not taken are placed in the territorial reserve, while Class II men are classified under the national reserve. The standing army consists of the men undergoing colour service and those who on completion of colour service pass to the 1st Reserve. From the 1st Reserve the trained men pass to the 2nd Reserve and subsequently to the national army. Certain exemptions and postponements of colour service are allowed to students, sole supporters of a family, etc.

The reduction of infantry colour service from two years to eighteen months has been compensated by a system, introduced in 1925, of compulsory cadet training in secondary and high schools, the training being carried out by officers on the active list seconded for the purpose. Thus those who escape the conscription ballot form a partially trained man-power beyond the ex-colour service men.

[1] An infantry regiment = 3 battalions each of 600 men;
A cavalry „ = 3 or 4 squadrons each of 100 sabres;
A field artillery „ = 6 batteries each of 4 guns;
An engineer battalion = 3 companies each of 150 men;
A commissariat „ = 300 men.

The raw material from which the Japanese army is recruited is excellent. Moreover, the Japanese have always understood the necessity for good officers, and no pains are spared in their selection and training. Combatant officers enter the service through the Military Cadet School, and those of the technical branches from universities and technical schools, or through the Paymasters' School. A few commissions are offered to men who have passed through the ranks. The highest importance is placed on moral training and on the cultivation of the military spirit, first in the officers and through them in the rank and file. This moral training is derived from the famous *Bushido*—literally "the warrior's way"—a Japanese philosophy of chivalry whose chief tenets are obedience, courtesy and courage.

From the day the recruit joins the colours his training is carried out according to a progressive schedule, proceeding upwards from squad drill to company exercises, and thence through the higher formations to inter-divisional manœuvres. Special grand manœuvres, in which four or five divisions together with army troops take part, are held annually early in November—a period when the weather is "set fair"—each year in a different part of Japan, so that in a series of years all divisions have had their turn. These grand manœuvres are not so much a tactical exercise as a training of higher organizations and an endurance test for the troops; at the same time they serve to "show the flag" in affording a spectacle for the populace, the entire region being *en fête* for the three or four days occupied by the exercises. It is true that the presence of so many spectators hampers the troops, but the advertisement is worth it and serves to popularise the army with the taxpayer. The latter gets his money's worth to judge from the sounds of hilarity which greet such incidents as a fall from a horse, a tumble into a wet ditch or paddy field, or other minor calamities which have a universal appeal to the proletarian sense of humour. In all classes of manœuvres the troops use billets or bivouacs. Tents are not carried. Full use is made of the Reservists' Association, a semi-official organization somewhat akin to the British Legion, in helping billetting officers and quartermasters and in general assistance to the troops.

The soldier's period of colour service is an intensive course. Leave passes are granted only on Sundays and holidays. The officers are particularly hard worked, any time that can be spared from regimental duties being devoted to their own higher military education, both locally and by attendance at central courses. The health of the troops is carefully supervised, and every precaution is taken against the outbreak of disease. The staple national diet of rice, fish and vegetables is augmented with bread and meat.

A feature of the soldier's hardening process is the "snow march," carried out annually in mid-winter, when units spend a week marching, bivouacking and performing tactical exercises, usually in the nearest mountain district. The severer the weather the more effective the test. The battle here is against nature, and though disaster is not courted risks are taken; it has happened that a sudden snow-storm or unexpected snowdrift has been the death of individuals and even units.

Military education is under the control of a special department, and is given by:—

(1) Military preparatory school for boys who intend to become officers;
(2) Military cadet school for graduates of the military preparatory school and candidates from other schools;
(3) Military training schools for aspirants to N.C.O. ranks;
(4) Military technical schools giving elementary and advanced courses in gunnery, musketry, engineering and so on for officers and N.C.O.s of various branches of the service.

There is also the Staff College for Captains and Lieutenants, under the control of the General Staff. The statistics published for 1930 gave Instructors 56, Students 160, Graduates 560.

For the manufacture and upkeep of equipment there is the Military Arms Depot with headquarters in Tokyo and several branches in the provinces, in addition to several arsenals and powder factories. To supplement the mechanical transport maintained on the establishment, a system of subsidies was introduced in 1918 whereby grants, according to the nature of the vehicle, are allowed to civilians who maintain motor vehicles suitable for military purposes.

The air service, of which mention has been made, was originally developed on a French model, drawing its instructors and material from France; later on British machines were purchased to be copied by government and private factories. The handicaps to aviation are severe, for the terrain, consisting chiefly of mountains and paddy fields, is unsuitable for aircraft, and the mountains are also responsible for treacherous air currents. Though the Japanese do not claim to be in the front rank of aviators, their air force has played an important part in recent operations in the field. Military pilots are encouraged to make long-distance flights, the principal achievements which have been made public being a night flight of nearly 700 miles over Japan, and a non-stop flight of 1,800 miles between Japan and Formosa. Feats overshadowing these are said to be in contemplation between Japan and Asia.

In a recent article entitled "Some new War Tactics," a Japanese officer explains some features of the Manchurian operations. Cavalry came into its own in Manchuria, and a cavalry regiment accompanied by a machine-gun party in side-cars distinguished itself in the Tsitsihar area. He attributes the disaster which befell a cavalry regiment at Chinhsi to lack of these machine-guns. Commenting on the difficulties attending transport of troops where mobility is of primary importance he notes that transport by motor lorries on a large scale achieved notable success against bandits near Chinchow. More than 50 motor lorries full of soldiers ran parallel with troop trains along the Peiping-Mukden line. This escort was effective and no lorries came to grief. Lorries equipped with wireless did invaluable work. Light aeroplanes were found useful for reconnaissance, the heavier machines having difficulty in the matter of landing grounds. Good results were obtained with a pattern of military railway coach convertible into a motor-truck by means of detachable tyred wheels for traversing a damaged portion of railway line. Artillery improved its system of ranging and developed methods of concentration of fire and barrage, thereby clearing the enemy's ground and relieving the infantry of much costly rifle and bayonet work.

The upkeep of a large army and its intensive training has strained the nation's finances to a degree that has led to an outcry for reduction on army expenditure. The greater part of the money saved by the reductions in strength in recent years does not appear to have been handed back to the exchequer but to have been retained for improvements in equipment. With a show of yielding to popular clamour, the Army Budget for 1932, estimated at 194 million yen (£19,400,000 at par), was slightly below the average for the past five years, but the active operations which followed those estimates have caused an enormous jump. In the Draft Budget for 1933–34 the army asks for 447 million yen (£44,700,000 at par), which is to include its share of the cost of the Manchurian operations. These estimates envisage a possible increase of strength at the expense of mechanization. The Manchurian situation will for a long time drain the military chest and through it the national exchequer. Public opinion has not yet expressed itself on this point, though the Press is not satisfied with the demands of the fighting services and would like some further details as to the necessity of such a heavy expenditure.

The latest re-organization scheme, although still-born, is of interest as indicating the trend of military opinion. It was approved and made public in 1931 as a seven-year plan to begin in 1933. A reduction in strength was proposed of 16,000 men and 1,000 horses, equivalent to

about two divisions on a peace footing. The money saved in this way, and by the sale of disused war material, lands, and buildings was to be devoted to improvements in training and equipment, overriding the recommendations of the Budget Economy Commission. Instead of the relief every two years of the division forming the Manchurian garrison it was proposed to maintain a permanent division recruited from various divisional districts in Japan. This adjustment was expected to be delayed owing to its cost. It was further proposed to transfer one of the existing home divisions to Korea, composed also of drafts from other divisions. Both the Manchurian and Korean divisions were to be smaller than a home division.

The Manchurian affair which then followed has created a situation in the Far East necessitating the drawing up of a new scheme which is to be presented in due course. It is said that military opinion now favours a garrison of three divisions in Manchuria. The Press in commenting on these proposals draws attention to the reinforcement of these outposts on the Asiatic mainland as indicating the next phase in the three-cornered struggle between Japan, China and Russia with Manchuria as the battleground.

In conclusion, it may be remarked that Japan, though on her own admission comparatively backward in material equipment, possesses large reserves of man-power. With this element she is wont to be prodigal when occasion serves.

THE WORK OF THE INTERNATIONAL HYDROGRAPHIC BUREAU

By COMMANDER G. B. SPICER-SIMSON, D.S.O., R.N.

THE International Hydrographic Bureau was created in 1921, and was established at Monte Carlo. The objects of its work may be summarised in the words :—" to make navigation easier and safer in all the seas of the world."

The following twenty-one maritime states became members :—

Argentine	Denmark	Norway
Belgium	Egypt	Peru
Brazil	France	Portugal
British Empire :—	Greece	Siam
Great Britain	Italy	Spain
Australia	Japan	Sweden
Chile	Monaco	United States
China	Netherlands	of America

The Government of Belgium has since withdrawn for financial reasons, but, in 1929, Germany and Poland became members.

The Principality of Monaco was selected as the seat of the Bureau largely because of its position on the sea, its central location, its excellent communications with the rest of the world, and also because of the interest taken by the late Prince Albert I. of Monaco in all questions connected with the sea.

In 1927 the local Government offered to erect a building specially for the Bureau, with the sole proviso that it should remain there for not less than twenty-five years. This generous offer was accepted by the various States, members of the Bureau, and in April, 1929, the corner-stone of the building was laid, with appropriate ceremony, by H.S.H. Prince Louis II, in the presence of the Delegates to the First Supplementary International Hydrographic Conference then in session.

On 14th January, 1931, the Bureau was formally installed in this handsome and convenient building on the Quai de Plaisance of the harbour of Monaco by Prince Louis of Monaco, accompanied by the Hereditary Princess, the Minister of State and most of the officials, both native and foreign, in the Principality.

The Bureau is supported by yearly contributions from the States members, based on each State's total combined naval and mercantile tonnage. Each State member has one vote on technical and administrative questions, but for the election of the Directors and Secretary-General the number of votes allotted to each State is based on the same tonnage figure as that which determines its contribution.

Having been established after the Treaty of Versailles, and the majority of the members being also members of the League of Nations, it was necessary as well as desirable for the Bureau to be affiliated with the League, but it is completely and entirely autonomous.

Under the Statutes of the Bureau its work is conducted by a Directing Committee, chosen by the vote of the members, consisting of three Directors elected for a period of five years, and by a Secretary-General also elected for a term of five years, assisted by a staff of technical and administrative assistants. The officers composing the first governing body were :—

Directing Committee :—

President : Admiral Sir John F. Parry, K.C.B. (Great Britain).

Members : Rear-Admiral J. M. Phaff (Netherlands).
Captain S. H. Müller (Norway).

Secretary-General : Commander G. B. Spicer-Simson, D.S.O., R.N. (Great Britain).

Had it not been for the unfortunate death of Monsieur Renaud, who was a renowned French hydrographer, and who originated the idea of the creation of the Bureau, he would undoubtedly have been selected as a member of the First Directing Committee. The President is the Director who receives the highest number of votes.

A Hydrographic Conference is held at Monaco every five years, at which all questions connected with hydrography are discussed, and the report of the work carried out by the Bureau since the previous conference is considered, as also is the financial statement. At the end of the Conference voting takes place for electing the three Directors and Secretary-General for the next five years. The present Directing Committee, elected in April, 1932, consists of :—

Directing Committee :—

President : Rear-Admiral J. D. Nares, D.S.O. (Great Britain).

Members : Ingénieur Hydrographe Général de réserve P. de Vanssay de Blavous (France).
Rear-Admiral A. T. Long, U.S. Navy.

Secretary-General : Commander G. B. Spicer-Simson, D.S.O., R.N. (Great Britain).

The principal work undertaken by the Bureau is as follows :—

The study of documents published by hydrographic offices ;

The drawing up and publication of various lists, such as those of geographical positions, abbreviations, and conventional signs used on charts, etc. ;

The study of methods of hydrographic surveying ;

The study of methods employed for the production of the results of surveys for publication ;

The study of the construction and use of hydrographic instruments and appliances ;

The study of the methods of recruiting and training personnel for surveying vessels and hydrographic offices ;

The making of researches on any other subjects which affect hydrography.

Reports on the results of such studies and research which appear to be of general interest are published in French and English.

The regular publications of the Bureau include :—

The Annual Report.—This contains a general report on the administration and work of the Bureau.

Special Publications.—These are issued at irregular intervals, and contain information which is likely to be of more than passing interest. Some of them contain tables which are of permanent value.

Hydrographic Review.—This publication is issued twice annually, in May and November. The contents are very varied and include articles by authorities of many nations dealing with nearly every aspect of hydrography and with many allied sciences in so far as they affect hydrography. It is an organ for free discussion and exchange of views between hydrographic surveyors, and it contains a bibliography of hydrographic publications.

International Hydrographic Bulletin.—This is issued each month, commencing in January, 1928. It contains information which may be important, but is of ephemeral interest only.

Year Book.—This is published annually. It gives the titles, addresses, etc., of hydrographers, information as to hydrographic offices, a list of surveying vessels with their tonnage, etc., for the whole world, so far as such information has been communicated to the Bureau, besides other information of interest to seamen.

In addition to the above, the Bureau has published :—

Reports of Proceedings of the International Hydrographic Conferences:—1st Conference, London, 1919 ; 2nd Conference, Monaco, 1926 ; 1st

Supplementary Conference, Monaco, 1929; 3rd Conference, Monaco, 1932.

The Statutes of the International Hydrographic Bureau, 1926.

By these means the Bureau disseminates information on subjects pertaining to hydrography and navigation. The Monthly International Hydrographic Bulletin contains information of immediate interest and importance. It includes also a list of all recent hydrographic documents and publications received from the various hydrographic offices of the world, and directs attention to matters of urgent importance. The semi-annual Hydrographic Review, published in both French and English, contains monographs of general interest to hydrographers and navigators, important articles translated from foreign publications and descriptions of new methods and instruments in use in the various countries. By this means each hydrographic office can keep in touch with the methods used and work being done by other hydrographic offices; this should tend to lead gradually to an improvement in the methods in use besides helping to bring about uniformity in hydrographic documents and publications.

In general, it has been found at the International Hydrographic Conferences that all countries are anxious to bring about that uniformity in hydrographic documents and publications which is so greatly to be desired. Possibly the greatest hindrance to the realisation of this ideal is the ever-present question of cost and, while it may be relatively easy to obtain agreement regarding some questions, in others the cost of making the changes involved is almost prohibitive.[1]

In spite of these drawbacks, however, the International Hydrographic Bureau has to its credit a long list of accomplishments which will certainly do much to make navigation easier and safer. Amongst these may be noted: the universal adoption of compass graduation from 0° to 360°, the standardisation of numerous signs and symbols in use on marine charts, the establishment of central offices at various ports for the exhibition of Notices to Mariners, as well as the publication of numerous special publications on technical subjects.

In general it may be stated that the Bureau not only links the various hydrographic offices of the different States, but is a sort of "clearing house" for all hydrographic information. It satisfies, as far as possible, all requests for information or advice in connection with hydrography addressed to it by a member, and gives considered opinions on all questions dealing with its work which are referred to it by Conferences or by scientific institutions.

[1] *Vide* "New Aids to Navigation and Pilotage"—lecture by Captain K. E. L. Creighton, M.V.O., R.N., in the JOURNAL for May, 1932, p. 351.

The Bureau also studies subjects pertaining to aerial navigation and charts, and methods of aerial surveying, and publishes various articles on questions relating thereto.

It does not publish navigational charts, but the States members send to it copies of all original or partly original charts, sailing directions, light lists, tide tables, etc., issued by them, and thus it has a complete collection of such charts and books. The Bureau is building up a library by collecting publications relating to the subject of hydrography, and many valuable works have been presented to it.

The Statutes state also that :—

> " The Bureau shall be a consultative body only, and shall have no authority whatsoever over the hydrographic offices of the members, which remain entirely independent with complete liberty and initiative ;
>
> It shall never deal with any subject which involves questions of international policy ;
>
> The Bureau shall keep itself in direct and close communication with the hydrographic and other scientific offices of the members. It may communicate with such offices of other States also, at its discretion."

Since one of the aims of the Bureau is to attempt to bring about uniformity in hydrographic documents and publications, it must keep in close touch with the constant improvement in apparatus and methods, new inventions and scientific discoveries which mark the progress of civilization, which must be carefully followed in so far as they pertain to hydrography and navigation. Among the most interesting phases of the work recently undertaken by it is the collation and plotting of all deep sea soundings obtained. This is being done in order to keep the General Bathymetric Chart of the Oceans up to date.

The use of original charts, instead of reprints by foreign nations, has long been held advisable, and one of the purposes of the Bureau is to help to realise this aim. Naturally, this could not be attempted unless the signs, symbols and abbreviations on all charts all over the world were standardised. This question has been discussed in detail at all the International Hydrographic Conferences, and gradually more and more of the symbols in common use have been standardised by the various hydrographic offices. In order to facilitate this, the Bureau has prepared a synoptic table showing the various symbols and abbreviations in use by the different countries. In spite of the desire of practically all hydrographic offices to conform to a standard set of signs and symbols, the realisation of this aim still lies in the distant future owing to the excessive

cost of making changes on existing charts. The best which can be hoped, under these conditions, is that, with the issue of new charts, the symbols adopted at the Conferences will gradually be substituted for the old symbols.

The Bureau has also prepared a synoptic table showing the signs, symbols and abbreviations in use by the various hydrographic offices which publish charts for aerial navigation. This table was then turned over to the International Committee on aerial navigation, where it was made the basis of a study by the delegates to a conference on aerial navigation. Fortunately, as but few hydrographic offices had started the publication of charts for coastal aerial navigation, there is great hope of early standardisation, which will obviate the confusion which prevailed owing to the multiplicity of symbols formerly in use on marine charts.

From the above it will be seen that the International Hydrographic Bureau, although created with the principal object of co-ordinating the work of the hydrographic services of its members and of establishing a a close and permanent association between them, has as its main object the improvement of navigation, and thus should appeal to all those who "go down to the sea in ships."

THE INTERNATIONAL SITUATION

THE DISARMAMENT CONFERENCE

THE long drawn out Conference on the reduction of armaments, which, when these notes were compiled for last quarter's JOURNAL, appeared to have reached an *impasse*, has received a new lease of life. It will be remembered that Germany had refused to discuss disarmament any more until the other Powers accepted her claim to "equality of rights." So, the nation which, above all others, had been forced to reduce its arms by international decree, was seen issuing an ultimatum that seemed likely to give the *coup de grace* to the whole Conference. The effect was to force the delegates to face realities to an extent which they had never had to do before.

France, scenting a new threat to her security, strongly resented any weakening of the conditions imposed on her dangerous neighbour by the Treaty of Versailles; while Britain proceeded to chide Germany for raising "a political controversy of this magnitude . . . at this moment," and bade her trust in the Geneva parleys to produce a settlement which would be satisfactory to the "national pride and dignity of all concerned."

But Germany would yield neither to threats nor blandishments, and replied, in effect, unless you agree to our terms we intend to go our own way in future, and acquire such armaments as we consider necessary for our national pride and security. The Powers found themselves in a cleft stick. To have used force to compel Germany to remain disarmed would have been the complete negation of the primary object for which the League of Nations exists, because it would certainly have produced acute dissensions amongst themselves and would probably have meant recourse to war. They were left with the choice of leaving Germany to her own devices or of recognizing her claims. The first could only have led to an increase of arms all round; thus Germany won a great diplomatic victory, and her claims were accepted as one of the conditions on which further discussions will be based. It is a striking proof of the fact that the nation which has the courage of its convictions and ambitions has little to fear from pressure by international gatherings.

On 11th December, Germany's return to the Conference table was assured by the signing of a "Five Power Agreement," in which Britain,

France and Italy declared that " one of the principles that should guide the Conference . . . should be to grant to Germany and to other Powers disarmed by Treaty, equality of rights in a system which would provide security for all nations . . ."

Then followed the statement that Britain, France, Germany and Italy " are ready to join in a solemn reaffirmation to be made to all European States that they will not in any circumstances attempt to resolve any present or future differences between the signatories by resort to force."

The United States' representative was also a signatory to this Agreement without, apparently, committing his country specifically to any clause except the last, wherein the Five Powers resolved to " co-operate in Conference with other States . . . to work out a Convention which shall effect a substantial reduction and limitation of armaments . . ."

And so this tedious parleying is starting again, and discussions will, doubtless, centre round new plans for reducing armaments put forward by certain Powers last autumn.

FRANCE

The French plan, while reluctantly paving the way for Germany to be a partner in the bargaining, reverts as ever to the theme of security to be guaranteed in practical fashion by the League of Nations. Some of the proposals, however, are so unpractical that France cannot expect effect to be given to them. Amongst these is one whereby a military force would be placed under the control of the League of Nations, ready to spring at the throat of an " aggressor "[1]; some possible results of such an arrangement were outlined in this section of the November JOURNAL. France has also returned to her claim that " each signatory State in possession of naval forces shall at the first summons of the League give the preliminary assistance to which a State, the victim of an aggression, . . . shall have the right." This, in effect, means placing certain units of the British Navy unreservedly at the disposal of the League—a policy which was long ago repudiated by the British Government.

[1] The French Plan, published in the English Press on 15th November, 1932, contains provision for " the specialization of a reduced number of men (bodies of troops on more or less long engagement and equipped with the material forbidden to the national armies) ; these elements . . to be at the disposal of the League of Nations, ready to go into action at the first summons. In each State, under the control of the League of Nations, there is to be kept a stock of mobile equipment earmarked exclusively for the use of States which are the victims of aggression." . . . " There is to be a progressive unification of war material, the manufacture of which is to be internationally organized and controlled."

BRITAIN

It was the declaration of British policy, presented to the Bureau on 16th November last, which mainly paved the way for the return of Germany to the Conference. This new statement of the British attitude towards the armament of that country was in marked contrast to the previous note on the subject.

The British disarmament plan, which accompanied the declaration, contained certain definite proposals for reducing " offensive " armaments. The naval section was mainly devoted to a resumé of previous suggestions for the reduction in the size of warships[1] and the abolition of the submarine. The military section specifies " offensive " (heavy) as distinct from " defensive " (light) tanks ; while it presses for the reduction of mobile land guns to a maximum calibre approximating the British 4.5-inch type. The proposals for the reduction of air armaments are the most important, as they are the most drastic. They include :—

(1) The immediate reduction of the air forces of the leading Powers to the level of those of the United Kingdom ;

(2) An all-round cut of 33⅓ per cent. on the air forces of the world thus reduced, Britain included ;

(3) Limitation of the unladen weight of military aircraft to the lowest figure upon which general agreement can be obtained. Pending examination of this proposal, Germany to refrain from claiming the right to possess military or naval aircraft.

The British declaration remarks on Germany's desire to be released from the prohibition against compulsory military service in some detail, and maintains that the guiding principle should remain that reorganization of the German force must not involve increase of Germany's powers of military aggression.

JAPAN

On 11th December, Japan presented some new proposals for naval reductions. The application of a " regional " principle was suggested. This would divide the sea-world roughly into Pacific, Atlantic, European, and South American groups, and the " . . . tonnages to be actually retained by a country shall be agreed upon between that country and other countries of the same group on the basis of the provisions embodied in the general agreement. (As for the U.S.A., British Empire, France, Italy and Japan, the special agreements apply to the tonnages of ' B ' class cruisers, destroyers and submarines)."

[1] But it is remarked that " exhaustive investigation has shown that the arbitrary figure of 10,000 tons as the limit of a capital ship would fail to command general acceptance." (See also First Lord's statement on this subject—" Navy Notes," p. 178).

After pointedly observing that " strengthening of the defensive power by weakening offensive power necessarily demands a larger sacrifice on the part of the larger navies," the Japanese plan ingeniously calls for a re-allocation of tonnage greatly in her favour as compared with Britain and the United States. The relative strength in capital ships is to be 11, 11, and 8 instead of the existing 15, 15, and 9; and Japan's 8-inch cruiser ratio is to be 83 instead of 74 per cent. of that of the other two naval Powers. In " B " class cruisers, destroyers and submarines, the five naval Powers are to have " uniformity of tonnage."

Japan's proposals for future construction are that battleships should be limited to 25,000 tons and 14-inch guns; " A " class cruisers to 8,000 tons and 8-inch guns; " B " class to 6,000 tons and 6.1-inch guns; destroyers (including leaders) to 1,500 tons and 5.1-inch guns; and submarines to 1,800 tons and 5.1-inch guns.

It is asserted that " a large majority of the members of the Naval Commission recognize submarines as being defensive and not offensive in character "; but it is straining this generality somewhat to imply that the proposed 1,800 ton limitation does not permit of submarines of a highly offensive type. This again begs the question " when is a weapon offensive in character ? " the answer to which would seem ever to be " it depends when, where, and how it is used."

Aircraft carriers, under the Japanese plan, would be abolished. Visions of concerted air attacks on Japanese territory by the aeroplanes of the " Lexington " and " Saratoga " perhaps give these craft an " offensive " character in their eyes.

GERMANY

On 1st January, General von Schleicher, the German Chancellor, announced with pardonable pride that " the principle of German equality has been definitely acknowledged by the other Powers. We return to the Disarmament Conference to attain a really genuine disarmament and security such as other countries enjoy. If we succeed at the same time in restoring to the German youth within the compass of the militia the right to bear arms in the service of the State, a long step will be taken towards the adjustment of international contentions and towards the restoration of peace in our Fatherland."

LEAGUE OF NATIONS

The executive committee of the Disarmament Conference met on 23rd January. The Conference was due to re-assemble on 31st January.

CHEMICAL WARFARE

WHEN all else fails in the way of agreement to disarm, resort has been had again and again by the Powers, severally and collectively, to a solemn pronouncement outlawing all forms of chemical, incendiary and bacterial warfare, but there are certain practical and technical difficulties involved in this prohibition and in supervising its enforcement. Those have formed the subject of a report prepared by a Special Committee, in reply to a questionnaire submitted to it by the Bureau of the Disarmament Conference.[1]

In the first place, the Committee considers that such protective devices as masks, respiratory apparatus, etc., are necessary in order to guard against the effects of chemical weapons, and that, since such devices are also used in time of peace in a number of industries, their manufacture cannot be prohibited. Further, the testing of this protective material involves the use of a small quantity of poisonous substances.

Again, with regard to offensive material, the Report points out that chemical, incendiary and bacterial warfare does not necessarily require any special implements and little, if any, special training. To give two examples, apparatus intended for producing therapeutic clouds when combating diseases of trees can also be used for creating clouds of poisonous substances, and certain fire-extinguishers can easily be converted into flame-projectors which can be used either in a military sense or in destroying locusts.

The Committee draws attention to the fact that "in a country possessing an important chemical industry it will always be possible to use chemical weapons; and chemical warfare can always be rapidly organized, even though no special preparation has been made in peace time." Moreover, the Committee emphasizes its opinion that no restrictions must be imposed which might hinder chemical research and the growth of human knowledge or which might retard the progress of the legitimate chemical industry. It also recommends that prohibition of preparations for chemical warfare should not apply to research work (and) the preparation . . . of apparatus for giving protection against poisonous substances, the preparation of measures of collective protection, the training of troops and of the population in protective measures against poisonous substances, and therapeutical research in regard to casualties due to poisonous substances, but such prohibition should give a transgressor a decisive superiority and so increase the temptation to use the chemical arm.

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[1] Allen & Unwin. Price 1/-

After examining various suggestions for supervision, the Committee is of opinion that, although conceivable in theory, they would prove impossible in practice. It will, therefore, be especially important to define the procedure and penalties to be applied in cases of infringement of the undertaking not to resort to the use of the prohibited weapons against an adversary. In this connexion the Committee makes certain constructive suggestions for the rapid establishment of the facts by a "commission for urgent initial investigation," for procedure, and for concerted aid to be given to the attacked State.

The ten following States were represented on the Special Committee: Great Britain, Denmark, France, Italy, Japan, the Netherlands, Poland, Spain, Switzerland and the United States of America.

BRITISH INTERESTS IN THE PERSIAN GULF

By Lieutenant-Colonel H. E. Crocker, C.M.G., D.S.O.

THE announcement of the Persian Government, on 26th November last, that they had cancelled the concession under which the Anglo-Persian Oil Company operates, called forth a rejoinder from the British Government demanding the immediate withdrawal of the cancellation and stating that they "would not hesitate to take all legitimate measures to protect their just and indisputable interests if the necessity should arise," and that "no damage to the Company's interest or interference with their premises or activities in Persia would be tolerated." This unequivocal pronouncement of the British official attitude in the matter led, ultimately, to the Persian Government appealing to the League of Nations; but, whereas the British Government is, presumably, prepared to abide by the ruling of the League in regard to the legality or otherwise of cancelling the concession, Persia is desirous of securing the authority of the League to deal direct with the Anglo-Persian Oil Company without official "interference."

Apart from the fact that the British Government owns about 57 per cent. of the ordinary shares in the Company, and is therefore the most interested party on our side of the dispute, British control of these oilfields is a very important feature in the whole system of Imperial Defence. The business aspects of the matter may call for readjustment as an act of grace on the part of the Company but there can be no question of our allowing Persia to ignore a legal and binding agreement while there can be no suggestion of our surrendering our predominant position as the lessee of the fields and proprietors of their output.

For the moment there is little more to be said about this controversy, but it may serve to remind us that we have many other interests in and around the Gulf, besides those connected with the Anglo-Persian

oilfield and that sea " pipe-line " which has its supply end at Abadan. Let us take stock of these interests and see how political and strategical developments in recent years have affected the security of our hold on them.

To begin with, the Gulf may become something of a rival to the Red Sea as a route to India and the Far East. True, it cannot provide an alternative all-sea route, but already the Indian air route follows its southern coast-line and, with the completion of the trans-Continental and projected Haifa-Baghdad railways to Basra, there will be available a new land and sea route to our Eastern Empire. Additional importance attaches to these new communications because the trend of international affairs has already caused a certain weakening of our position in Egypt and this may result in lowering the traditional standard of security of the Suez Canal. In due course a reduced British force may find itself quartered on the outskirts of a hostile country, and limited in its activities to local defence of that waterway. In this position it will, obviously, be unable to exert the same influence to maintain the neutrality of a nation, a section of which is already none too friendly, to the same extent as it can to-day when it is stationed in the centre of government. If, or when, this change in the military defences of the Canal comes about, it is easy to imagine conditions in which shipping could only be passed through it as an operation of war. Any relief which could then be given by an alternative route would be particularly valuable.

Another interest in the Gulf arises from our association with Iraq. It was only last year that we relinquished our formal responsibilities in that young kingdom, and it has not yet reached a stage of such complete emancipation that it can dispense entirely with British moral and military support. But the focus of the interests which, it is to be hoped, will for long preserve the ties which unite this debutante nation to its foster-mother, seems to be shifting from Baghdad to Basra—the Iraqi port and railhead seventy-five miles up the Tigris.

Basra.

Basra seems destined to become something of a Singapore of the Middle East. It is now connected to Baghdad by a railway and, when the Mosul gap is completed and the train-ferry across the entrance to the Bosphorus is running, there will be a direct rail service to Basra from the Channel ports; harbour and dock facilities are being developed in readiness for this event. It is already established as a night-resting place on the Imperial Airways' route to India, and when, in due course, the Royal Air Force in Iraq cease their present responsibilities, one

flying boat and one aeroplane squadron will be based on Basra. It will, doubtless, be a useful port of call for British naval units in the Gulf.

Strategically, Basra serves a dual purpose. It provides a convenient landing place for an expeditionary force from India, should it ever be necessary to respond to a call for assistance from Iraq; and it could be used, in emergency, as a port of embarkation for British reinforcements for India or the Far East, bearing in mind that troops can now be transported over-land with remarkable rapidity and in considerable numbers by air.[1] As an air force base it commands the rail and river lines of communication to the Gulf and will enable close watch to be kept on the new Persian port of Bandar Shahpur.

Other Interests.

On 1st April last, the agreement with the Persian Government whereby the Indian air mail used certain landing grounds in their territory came to an end. Although it was renewed up to 1st October, the attitude of that government, which had never been well disposed towards the arrangement, became so unfriendly that it was decided to transfer the route to the Arabian side of the Gulf.[2] Landing grounds have now been made at Bahrein, Yas Island (only used if required) and Sharyah and the transfer was effected on 5th October.

Bahrein, Basidu and Hanjam—the two latter being near the mouth of the Gulf—are islands which are important to us from a naval point of view, and we have long and well-established claims to the use of all three places.[3]

Apart from these interests, our annual trade with Persia, Iraq and Arabia amounts to nearly £20,000,000. Some of the untapped sources of oil in Iraq may add to the flow of this commodity to Eastern markets via the Gulf. There is our time-honoured responsibility to civilization to check gun running and slave trading. Finally there are our obligations to the Trucial Chiefs.

All these interests and responsibilities in what is still no more than a semi-civilized part of the world, necessitate the maintenance of British naval and air forces to police the waters of the Gulf, and military forces in readiness at bases not too far distant. They also demand that a constant watch shall be kept on the political situation and on new forces with which we have not had to reckon until recently. In the first

[1] The distances from Haifa on the Mediterranean coast to Basra is a little over 700 miles, and from Baghdad to Basra is only 250 miles—as the crow flies.

[2] See "Progress in Civil Aviation," p. 729 of the JOURNAL for November, 1932.

[3] See "The Navy in the Persian Gulf," in the JOURNAL for May 1930.

category we must place the unfriendly attitude adopted to British interests by Persia and the distant but potentially dangerous menace of Soviet Russia behind her. In the second we find a small but absolutely modern Persian navy and an air force in the making.

Persian Naval and Air Forces.

Up to the latter part of 1932, the Persian navy consisted of two very old gunboats and a small minesweeper. But in September of that year it was augmented by two sloops and four patrol vessels, all newly completed in Italy. The former displace 950 tons, are armed with three 4-inch guns, and are capable of steaming 15 knots; although smaller than the British sloops in those waters they each carry one more gun. The four patrol vessels are craft of 330 tons and carry two 3-inch guns and two A.A. pompoms. They can steam 15.5 knots. The ships of this new flotilla are commanded by Italian naval officers and some of the technical officers and ratings have also been lent by the Royal Italian navy. The remainder of the officers and ships' companies are Persians who have been trained in Italy. The flotilla as a whole is commanded by a Persian official with the rank of Major. It is not known whether he has any naval qualifications.

Persia has placed an order for thirty Hawker aircraft, including fighters and bombers, with American air-cooled engines made by Pratt and Whitney, and according to a press report, the first of this consignment is already due for delivery.

The Persian Gulf forms part of our East Indies Station, where we maintain three cruisers[1] besides the Senior Officer's ship[2] and three sloops forming the permanent squadron in the Gulf. The cruisers, of course, constitute an overwhelmingly superior force compared with any other naval force in the vicinity, but they may not be on the spot if trouble arises, as they are few in number and the Station is large; moreover, judging by recent events, unless a purely routine visit has been arranged in advance, any movements of our Navy designed to protect our interests are liable to call forth criticism if not stricture, not merely from an aggressive Power abroad but from aggressive pacifists at home. It would seem desirable, therefore, to risk temporary abuse and take the opportunity, which existing circumstances and the future of British interests fully justify, to augment permanently our naval and air forces in the Persian Gulf.

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[1] "Hawkins" (Flag), "Emerald" and "Enterprise."
[2] "Triad."

THE SINO-JAPANESE CONFLICT

MANCHURIA

THE new state of Manchukuo was formally recognised by the Japanese Government on 15th September last, but up to the present no steps have been taken by any other Power to support this acknowledgment of Manchurian independence. The League of Nations Commissions' report was handed to the Secretariat of the League on 1st October, but no final decision has yet been taken on its findings. The latter have been made known to be as follows:—

(1) Both China and Japan are entitled to the same consideration from the League;

(2) It would be highly inexpedient to ignore the interests of Soviet Russia in any settlement;

(3) Any solution should conform to the principles of the Pact of Paris and the Washington Nine-Power Treaty;

(4) The interests of Japan in Manchuria must receive consideration;

(5) The statement of all Chinese and Japanese rights in Manchuria must be defined in all future Treaties affecting Manchuria;

(6) Provision to be made for the prompt settlement of minor disputes;

(7) The government in Manchuria to be modified in such fashion as to secure, consistently with the sovereignty and administrative integrity of China, a large measure of autonomy designed to meet local conditions and special characteristics in the three Provinces. The civil administration to satisfy all requirements of good government;

(8) Internal order to be secured by a local gendarmerie, while security against external dangers should be obtained by the withdrawal of all armed forces, other than the gendarmerie, and by conclusion of a treaty of non-aggression;

(9) Commercial relations to be set on an equitable footing through new commercial treaties;

(10) The final requisite for a satisfactory solution to the state of present political instability of China is temporary international co-operation in internal reconstruction.

Various recommendations of a general nature concerning the appointment of delegations to institute such a system are also put forward. Some provisions regarding the financing of the new state or province are set out; also some suggestions regarding the advisability of engaging

some foreign advisers to establish the administration of the new government, particularly with regard to finance. The latter, however, must remain strictly autonomous. It is proposed that the gendarmerie should be organized under foreign instructors, and that it should be the only armed force maintained in Manchuria. Japanese interests are to receive special consideration.

So far nothing has resulted from the Commission's proposals, but a Committee of Nineteen has been appointed at Geneva to take action on the report. China has signified her readiness to accept any such decisions; Japan has succeeded in delaying the work or rather the decisions of the Committee. It is also rumoured that Soviet Russia will not favour the official recognition of Manchukuo as an independent state.

The general situation in Manchuria can scarcely be said to have improved during the past quarter. Lawlessness has not diminished, while active brigandage continues and kidnapping is rife.

During October Manchukuo troops under the leadership of Su-Ching-wen, their own commander, rose against the Japanese in northern Manchuria. The Japanese had then begun a "drive" of the hordes of brigands infesting south-eastern Manchuria to the East of Mukden, who were reported to number over 30,000. This operation is said to have been concluded in a successful manner, whereupon the Japanese turned northwards at the end of November. Moving westwards under very severe climatic conditions from Tsitsihar against Hailar, a town lying some fifty miles beyond the Khingan mountains, the Japanese pushed back the insurgent Manchukuo troops and General Su until they were either seized and disarmed or driven over the Soviet frontier.

The Rival Forces.

The Japanese forces in Manchuria are variously estimated at 34,000 to 42,000 of all ranks and services. These comprise at least:—

2 divisions[1];
1 cavalry brigade;
6 battalions of railway protection troops.

The "Brigands" are estimated at about 200,000, and these have been classified as follows:—

(1) Political "brigands" (70,000). These are fairly well organized, being mostly ex-Chinese troops, and are said to be supported by Chang Hsueh-liang. They have been reduced in numbers as the result of recent operations.

[1] Some accounts speak of four divisions; this is an improbable total.

(2) Religious brigands or fanatics (13,000). These believe themselves proof against rifle fire and will attack with remarkable courage.

(3) Professional brigands (65,000). These are well armed and are only interested in personal profit. This class has been known in Manchuria for centuries.

(4) Peasant brigands (60,000). These are a new feature in the situation and may disappear when economic conditions improve.

The Manchukuo army is now estimated to number 120,000 of unproved value; there are also 100,000 police, many of whom carry rifles.

THE ATTACK ON SHANHAIKWAN

Early in December there took place a small incident near Shanhaikwan which ended in a slight clash between Japanese and Chinese at that place. This was repeated on 2nd January when the Japanese launched an attack against that place. At noon some thirty shells were fired into the town which was simultaneously bombed by seven aeroplanes. The next day two Japanese destroyers appeared off the shore and joined in the bombardment, which was renewed to cover an infantry assault. Within a few hours the South Gate of the town was taken by the Japanese, and the Chinese evacuated the place. Considerable damage was done and many fires were started; material losses were considerable, large portions of the town being reduced to ruins.

The cause of the Japanese action may probably be traced to the numbers of Chinese troops which had then been entering the town. This fact increased the dangerous state of tension that had long existed at Shanhaikwan between Chinese and Japanese. On 1st January the Japanese claim to have suffered from bombs thrown into the Japanese quarter of the town. It was thereupon agreed that Japanese troops should patrol that district. As a result of this step a clash between Chinese and Japanese became inevitable. The Japanese claim that Chinese fired on them, and the attack then took place. General Nakamura, commanding the Japanese troops in North China, later on issued a warning to the Chinese that incidents such as had occurred at Shanhaikwan may involve the whole of North China.

There does not seem to be any good reason for believing the incident to have been premeditated by the Japanese; but it is clear that the latter, in their role of protectors of Manchukuo, do hold views concerning the necessity for a military advance into Jehol. On that assumption it would be imperative for the Japanese to feel entire security as to their left flank in any such operation. The possession of Shanhaikwan assures

them of this security in the event of a spring campaign into Jehol. In order to make their position still more certain, on 9th January Japanese troops were despatched to occupy Chiumen, the gateway in the Great Wall, lying some eight miles North-West of Shanhaikwan, on the plea that it was being used by the Chinese as a means of introducing troops into Jehol. There was an engagement at that place, the result of which is not altogether clear, but it may be assumed that the Japanese are holding the gate.

After the evacuation of Shanhaikwan the Chinese reorganized their troops at Changhi; their losses are said to be not far short of 2,000. The Japanese advanced as far as Chinwangtao; their casualties are officially given at about 30. No further movement has since taken place. The most important feature of the affair is the Japanese hold on the Shanhaikwan defile and their presence south of the Great Wall.

So far no satisfactory settlement has been reached by the belligerents, and the possibility of further hostilities near Shanhaikwan, particularly in Jehol, continue.

THE CHINESE FACTIONS

THERE has been no change in the internal Chinese situation, although there has been the normal amount of intrigue on foot between the various parties. The salient feature has been the disinclination of Chiang Kai-shek at Nanking to take any decided action to prevent Japanese attacks on Manchuria and elsewhere. This attitude has given rise to great dissatisfaction both in the North and in the South. Feng Yu-hsiang has been seen in the North where he has inveighed against the Japanese and abused the Lytton Commission. A separatist movement in the North is held to be possible.

In the centre of China Chiang Kai-shek has continued his anti-Communist-bandit campaign and has cleared the country to the North of the Yangtse as far West as Ichang. Although a good rice harvest has tended to ease the bandit menace to a great extent, middle China is still largely paralysed by the bandits.

There has been a minor civil war in Shantung which is now over but has left a much disturbed situation.

ST. LAWRENCE WATERWAY

FOR many years, and actively since 1924, negotiations have been in progress between Canada and the United States with a view to the construction of a deep water channel via the River St. Lawrence to the Great Lakes. The existing facilities between Lake Superior and

the Atlantic are such that ships of 20 feet draught can proceed as far down as Lake Erie; thence there are two connections: one is by the New York State Barge Canal and the Hudson River with a minimum depth of 12 feet; the other is a 14-foot channel via the St. Lawrence River Canals. Transhipment takes place from the big lake steamers at Buffalo (for the Barge Canal), or at the Lake Ontario ports into shallow draft steamers, and finally on to ocean-going vessels at New York or Montreal.

A Treaty has now been signed between the two countries providing for the construction of a 27-foot waterway between Lake Superior and the Atlantic via the St. Lawrence. This will involve:—

(*a*) The improvement of the locks at Sault Ste. Marie, and dredging the St. Clair and Detroit Rivers to provide the necessary depth of communication between the upper lakes;

(*b*) The construction of a new waterway along the "international" portion of the River St. Lawrence, where that river forms the boundary between Ontario and New York State;

(*c*) The construction of a similar waterway along the purely Canadian section of the St. Lawrence.

The effect of these improvements will be that certain classes of ocean-going vessels will be able to load direct at the ports in the upper lakes, while the big lake steamers will tranship direct into ocean vessels at Montreal without a second transhipment at Lake Erie. When it is recalled that the traffic through the Sault Ste. Marie canals during the seven and a half months for which they are open is more than three times as great as that passing through the Suez Canal or the Panama Canal in a year, the importance of the matter will be understood.

The present agreement deals only with the work on the international section referred to under (*b*) above; this is the most important in scope and in political importance. The work covered by (*a*) and (*c*) above will, it is understood, be carried through simultaneously by the United States and by Canada respectively.

CORRESPONDENCE

(Correspondence is invited on subjects which have been dealt with in the JOURNAL *or which are of general interest to the services. Correspondents are requested to put their views as concisely as possible, but publication of letters will be dependent on the space available in each number of the* JOURNAL.—ED.)

ENTERPRISE IN NAVAL TACTICS

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—It has kindly been pointed out to me that the purport of my remarks in the last November issue about fleet cruising during the war was erroneous and likely to be misleading. In my letter I stated, although it was done inadvertently, that the fleets cruised in single line; that was certainly misleading. My intention was to show that the cruising formation of the line was single line ahead whatever the order of the fleet—whether in single line, divisions or sub-divisions. My commentator points out that the cruising order of the fleet was not "single line," but "divisions in line ahead disposed abeam." He also reminds me that the turn together pendant was used for zig-zagging; and that the nine pendant was used at Jutland in the presence of the enemy. He writes "All (i.e., Admirals Commanding) approached deployment in the cruising order and deployed into single line ahead. When it was necessary to make large alterations of course the line was broken up into columns of divisions and handled by the nine pendant. At Jutland the fleet was thus handled."

I shall be much obliged if you will publish these adjusting reflexions.

D. R. L. NICHOLSON,
Admiral.

20th December, 1932.

SAIL TRAINING FOR THE NAVY

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—In connexion with the lecture on "Sail Training for the Navy" in the November JOURNAL, one aspect does not appear to have been sufficiently stressed. When I was in command of the Naval Mission to Greece, 1926-27, the question of a new training ship for cadets arose. Agreeable to my views an auxiliary sailing ship was contracted for. She was to be a barquentine, with a Diesel engine. This rig gave opportunities for acquiring knowledge of both square and fore and aft sails without it being necessary to learn the more intricate art of sailing a full-rigged ship. The result is that Greek naval cadets are now able to be trained at sea during cruises of some months' duration at a minimum cost.

Within limits, time on passage is of no consequence; the object being to instil the habits of the sea, train the seaman's eye and give some experience of foreign seas.

As economy is essential, the relative expenditure on sea upkeep must be largely in favour of a sailing as against a power-driven vessel; moreover, the former can be of smaller displacement and at the same time must of necessity give more employment than is possible in the latter.

In view of the advantages of the auxiliary sailing ship as regards economy and more practical and greater sea experience, can there be any doubt as to the urgent need for some such type of vessel in our own Service.

C. S. TOWNSEND,
Vice-Admiral.

24th November, 1932.

SOUTH PERSIA DURING THE WAR

To the Editor of the R.U.S.I. Journal.

Sir,—In my article on "South Persia during the War," I made a statement that "at the outbreak of war several of these Swedish officers left their posts." This is apt to be misleading, as I am informed on very good authority that these officers were ordered by their Government to "leave their posts and to re-join their units by the 1st April, 1915."

I shall be obliged if you will kindly put this right in the next number of the Journal.

F. A. Hamilton,
Lieut.-Colonel.

11th December, 1932.

THE INDIAN ARMY

To the Editor of the R.U.S.I. Journal.

Sir,—With reference to Major Phythian-Adams' letter of 26th July last[1] on the subject of Pandy sepoys in the Madras Army, it is true that, in its palmiest days, namely those of Arthur Wellesley and Assaye, there were none. Their recruitment began after the Third Mahratta War, in about the 1820's, when Madras troops commenced to be stationed in Central India. According to an old uncle of mine, who joined the 15th Madras Infantry in 1843, his battalion had a large number, who, owing to their size, were placed in the grenadier companies. At this period the average Madras sepoy was of miserable physique and of poor fighting value owing to a ridiculous order from the Board of Directors of the Honorable Company directing that high caste men were to be preferred to those of low caste. This order came out in 1821 and corresponded to the phase when the whole of the Company's armies were on the down grade, the rock bottom reasons being, first a long period of peace, second, the weakening of the power of commanding officers by fatuous reforms like the abolition of flogging without adequate substitutes, and third, by the increasing age of the Company's officers.

The Madras Army suffered from the men comprising it being labelled Madrasi indiscriminately, a practice not followed in the other Presidential armies. The upshot was that officers not versed in its racial composition—and very few outside the Madras Army were—confounded good material with bad. In Wellesley's day, as the result of some forty years of war, the Madras officers had picked on the best available. It would appear that the bulk of the infantry comprised men of very much the same races as have been recruited for years in the famous Sappers and Miners or Pioneer regiments—men of low caste, or no caste at all. This, combined with the fact that the men were sternly disciplined, perpetually driven and worked by young, hard and virile officers enabled the Madras sepoy to stand up to casualties ranging from 20 to 30 per cent. at Assaye, and then to fight again a few weeks' later, at Argaum and Gawilgarh.

In pre-war days a very general fallacy existed that the march of the *Pax Britannica* had resulted in a falling off in martial qualities of Indian peoples, and an article written by an officer with a Punjab bias appeared in *The Times* a short time ago much to the same effect. If we analyse racial composition, however, we shall see that the races we now deem of but little value were regarded in the same light a century ago. The fighting peoples, with hardly an exception, again proved themselves. The lapse of such folk into second class soldiery, as was

[1] See Journal for November, 1932, p. 857.

the case with the Pandy, was due identically to the same reason which caused the hard, tough archer of Crecy and Agincourt to sink into the worthless drunkard who succumbed so readily to the levies of Joan of Arc—slack discipline, poor training and indifferent officering, more particularly in the senior ranks.

The Great War showed that the characteristics of the good Madrasi, the Jat, Rajput and Pandy were very similar to what they had been in Wellington's day. At that period, furthermore, the Mahratta, as a foot soldier under native generals, was contemptible, and he seldom put up a fight as a horseman. Yet who emerged from the War with a greater name among Indian soldiery?

E. B. MAUNSELL,
Colonel, late The 14th P.W.O. Scinde Horse.

17th November, 1932.

THE DEVELOPMENT AND FUTURE OF THE FORTRESS

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—Would you permit me, on the strength of having spent a few days walking round the fortified girdle of Namur and Liége some twenty years ago, to add some observations to Major-General Thuillier's remarks on those fortresses.

Both Namur and Liége seemed to me to present some remarkably weak features against attack. The outstanding fact was that all nine forts at Namur and nearly all thirteen forts at Liége had been sited on the highest available ground of a regular perimeter without any regard for the dead ground that this proceeding would leave available to artillery attack. Thus, in the case of Namur the three eastern forts were so placed that attacking artillery could approach entirely unseen to within 5,000 yards of its targets, while admirable observation of fire would be obtainable at about 3,000 yards. As one German artilleryman put it, "the fire on the Namur forts was little more than what we had done before war on Krupp's practice grounds at Meppen."

In addition, every fort offered a salient and was open to concentrated fire. Again, the forts were so disposed that should one fort be silenced, attacking infantry could have approached close in to either fortress unhampered by any direct fire from other forts, since both ground and observation facilities would favour such an advance. Thus the fall of the Fort de Dave, the south-eastern fort of Namur, would allow hostile infantry to advance up the Meuse Valley close up to the town from the South.

These indications ignore the fact that the Belgian forts were constructed and armed to withstand attack by their own weight of metal, i.e., 4.7" and 6" pieces.

The situation of all these forts was, in fact, not much dissimilar to that which would have occurred if, in the period 1916-17, all field and medium artillery had been located on high ground in the very front line.

It seems obvious that in planning any modern fortifications the first necessity would be to keep all heavy and medium guns not only concealed but also provided with such forward defences as can impede observation of fire on them, let alone a concentration of fire by superior ordnance at short ranges.

The attack and the defence, both at Liége and at Namur, stood on such different levels as to render any lessons to be derived from these operations rather uncertain unless allowances be made for the facts stated above. For the defence a great deal must depend on the quantity and quality of air observation; at Liége and Namur there was none.

H. DE WATTEVILLE,
Lieutenant-Colonel, late R.A.

January. 1933.

GENERAL SERVICE NOTES

GREAT BRITAIN

IMPERIAL DEFENCE COLLEGE.—Vice-Admiral L. G. Preston, C.B., has succeeded Air Marshal Sir Robert Brooke-Popham, K.C.B., C.M.G., D.S.O., A.F.C., as Commandant of the Imperial Defence College.

FRANCE

AIR SERVICE RE-ORGANIZATION.—Ever since a separate Air Service and Air Ministry were inaugurated there have been continual disputes about the control of the air formations attached to the Navy. It has now been decided that the Ministry of Marine shall have control over all co-operation and reconnaissance and a certain number of torpedo and bombing formations.

Fighters, and the majority of bombers, also bases and stores will be under the control of the Air Ministry. The personnel now employed in these groups will be given the choice whether they will serve under the Ministry of Marine or the Ministry of Air. (*See also* AIR NOTES, p. 210).

SPAIN

PROPOSED COUNCIL OF THE AIR.—In an interview given to newspaper representatives last autumn, Senor Giral, Minister of Marine, said that he was working in conjunction with the Ministers of War and the Interior preparing an extensive scheme for aerial communications. It was the intention to unify the air services now under the three separate Ministries under one control over which there would be a Superior Council of the Air, which, in turn, would be a dependency of the Presidency of the Council.

THE ROYAL TOURNAMENT, 1933

The Royal Tournament for 1933 will be held at Olympia, Kensington, London, from Thursday, 25th May, to Saturday, 10th June, inclusive.

NAVY NOTES

GREAT BRITAIN

Naval Strength and Policy.

A speech was made by the First Lord, Sir Bolton Eyres Monsell, in the House of Commons on 30th November during the debate on a motion by Sir Bertram Falle. He said that the British Navy is looked upon as the helper and protector of mankind in trouble all over the world. We have only 36 cruisers in commission at present, of which 29 are abroad. In the last eighteen months we have been called upon to send cruisers no less than eighteen times in cases of dire necessity. The strength of the Navy, in comparison with the year before the War, will have been reduced in 1936 by the London Naval Treaty as follows :— battleships from 69 to 15 ; cruisers from 108 to 50 ; destroyers from 285 to 117 ; submarines from 74 to 38. By the end of 1936 the tonnage of the British Empire will have been decreased 47 per cent., that of the United States may have been increased by 29 per cent., and that of Japan by 37 per cent. The First Lord added : " There will be no further unilateral reduction."

On the size of battleships, the First Lord said : " the 10,000-ton ship is not only unacceptable to us but would also fail to command general acceptance. In the opinion of the Admiralty, the 10,000-ton ship, for many technical reasons . . . would produce a ship quite incapable of fulfilling the functions of a battleship."

Turning to the question of personnel, the First Lord said that the worst trouble the Admiralty had to face, and which they must try to correct, was that of having too few men. The " pool " to allow for courses, foreign service leave, sickness, and crossing relief crews had been a very vulnerable target for economy committees. Theoretically, it might be sufficient, but in practice it is all wrong. The result of the shortage of numbers was, to his mind, the most serious thing in the Navy. It resulted in constant changes. Figures for a typical battleship and a typical cruiser in the previous six months showed that there were about 21 per cent. and 25 per cent. of men respectively shifted. This showed how impossible it was for a ship to get together. A very great loss of efficiency resulted. " I am afraid," he concluded, " the only real solution is an increase in fleet numbers. I attach the very greatest importance to this, and I regard it as the key to the just treatment of our sailors and the proper efficiency of our fleet."

The Admiralty Board.

Admiral Sir A. Ernle M. Chatfield, K.C.B., K.C.M.G., C.V.O., succeeded Admiral Sir Frederick L. Field, K.C.B., K.C.M.G., as a Lord Commissioner of the Admiralty and Chief of the Naval Staff on 21st January, 1933. Sir Ernle hauled down his flag in the " Queen Elizabeth " at Devonport on 9th November, 1932, after handing over the command of the Mediterranean Fleet to Admiral Sir William W. Fisher, K.C.B., C.V.O., on 31st October.

With the arrival of Sir Ernle Chatfield, the entire naval personne at the Board of Admiralty has been changed within a period of eleven months.

The Flag List.

Admiral P. H. Hall Thompson, C.B., C.M.G., was placed on the retired list at his own request, in order to facilitate the promotion of younger officers, to date 1st November, 1932. In consequence, the following promotions took effect from the same date :—Vice-Admiral Sir W. H. D. Boyle, K.C.B., to be Admiral ; Rear-Admiral H. T. Walwyn, C.B., D.S.O. (supernumerary while lent to the Government of India as Flag Officer Commanding and Director, Royal Indian Marine), to be Vice-Admiral ; Rear-Admiral E. R. G. R. Evans, C.B., D.S.O., to be Vice-Admiral ; and Captain C. A. M. Sarel, O.B.E., A.D.C., to be Rear-Admiral. Rear-Admiral Sarel was placed on the retired list to date 2nd November, and Captain W. T. R. Ford, A.D.C., promoted to Rear-Admiral.

The following flag retirements and promotions were announced by the Admiralty on 31st December :—Admiral B. S. Thesiger, C.B., C.M.G., placed on the retired list at his own request, in order to facilitate the promotion of younger officers, to date 31st December ; Vice-Admiral Sir Frederic C. Dreyer, K.C.B., C.B.E., promoted to Admiral ; Rear-Admiral H. K. Kitson, C.B., promoted to Vice-Admiral, and placed on the retired list under Order in Council of 7th February, 1927 ; Rear-Admiral H. O. Reinold, C.B., C.V.O., promoted to Vice-Admiral, and placed on the retired list under Order in Council of 9th March, 1914 ; Rear-Admiral T. J. Hallett, C.B., C.B.E., promoted to Vice-Admiral, and placed on the retired list under Order in Council of 9th March, 1914 ; Rear-Admiral C. V. Usborne, C.B., C.M.G., promoted to Vice-Admiral and placed on the retired list under Order in Council of 9th March, 1914 ; Rear-Admiral G. K. Chetwode, C.B., C.B.E., promoted to Vice-Admiral, 4th January, and reappointed in command of the First Cruiser Squadron ; Captain J. S. C. Salmond, A.D.C., promoted to Rear-Admiral, and placed on the retired list ; Captains Eric G. Robinson, V.C., O.B.E., A.D.C., and E. O. Cochrane, promoted to Rear-Admiral, 3rd January, and placed on the retired list, 4th January ; Captain E. J. Hardman-Jones, O.B.E., A.D.C., promoted to Rear-Admiral, 4th January ; Captains J. D. Campbell, M.V.O., O.B.E., A.D.C., and H. D. Hamilton, A.D.C., promoted to Rear-Admiral, 4th January, and placed on the retired list, 5th January ; Captains E. O. B. S. Osborne, D.S.O., A.D.C., and C. Varyl Robinson, A.D.C., promoted to Rear-Admiral, 5th January.

A further batch of retirements and promotions was announced on 21st January, on which date Admiral of the Fleet Sir Henry F. Oliver, G.C.B., K.C.M.G., M.V.O., LL.D., was placed on the retired list. In consequence, Admiral Sir Frederick Field, K.C.B., K.C.M.G., who relinquished the post of First Sea Lord on the same day, was promoted to Admiral of the Fleet ; Vice-Admiral F. H. Mitchell, C.B., D.S.O., to Admiral ; Rear-Admiral C. M. Forbes, C.B., D.S.O., to Vice-Admiral ; Captain E. J. G. Mackinnon, D.S.O., A.D.C., to Rear-Admiral, and placed on the retired list ; Captain H. D. Bridges, C.V.O., D.S.O., A.D.C., to Rear-Admiral, and placed on the retired list ; and Captain D. B. Le Mottée, A.D.C., to Rear-Admiral, the last-named to date 23rd January, 1933.

Flag Appointments.

Commander-in-Chief, The Nore.—Vice-Admiral Hugh J. Tweedie, C.B., now Commander-in-Chief on the Africa Station, where he is due to be relieved about 6th March by Vice-Admiral E. R. G. R. Evans, is to be Commander-in-Chief,

The Nore, in succession to Admiral Sir Reginald Y. Tyrwhitt, Bt., G.C.B., D.S.O., D.C.L., to date 16th May.

First Cruiser Squadron.—Rear-Admiral John K. im Thurn, C.B., C.M.G., C.B.E., who is due to be relieved as Assistant Chief of the Naval Staff by Rear-Admiral S. R. Bailey on 28th February, is to be Rear-Admiral Commanding the First Cruiser Squadron, in succession to Vice-Admiral G. K. Chetwode, C.B., C.B.E., to date 19th May. Rear-Admiral im Thurn is expected to assume command about 20th June.

Rear-Admiral, Gibraltar.—Rear-Admiral F. M. Austin is to be Rear-Admiral in Charge and Admiral-Superintendent, H.M. Dockyard, Gibraltar, in succession to Rear-Admiral T. N. James, C.B., M.V.O., to date 7th April, 1933.

Second Cruiser Squadron.—Rear-Admiral P. L. H. Noble, C.B., C.V.O., assumed command of the Second Cruiser Squadron in succession to Vice-Admiral E. A. Astley-Rushton, C.B., C.M.G., on 15th December, 1932.

Second Battle Squadron.—Rear-Admiral R. M. Colvin, C.B., C.B.E., succeeded Rear-Admiral W. F. French, C.B., C.M.G., as Rear-Admiral, Second Battle Squadron, Home Fleet, on 15th December, 1932.

Personnel.

Increased Promotions.—As the result of a clearance at the top of the Captains' list during 1932, largely through the co-operation of Flag Officers who retired voluntarily to facilitate the promotion of junior officers, the number of promotions from Commander to Captain in the New Year list was increased from ten to thirteen. The three extra promotions were made from the lower half of the normal zone, that is officers below 6 years' seniority. One officer had 5½ years, one 5 years, and one 4½ years.

Captains' Retirements.—It was notified in Fleet Orders on 11th November that, with reference to the orders issued in 1931 concerning, *inter alia*, the retirement in their existing ranks of Captains, Engineer-Captains and Captains (E), and Surgeon-Captains whom it has been decided not to employ in higher ranks, the Board have decided that this rule shall be applicable to Captains promoted to that rank after 7th October, 1931, instead of to Captains of seniority 1926 and below. This decision affects upwards of a hundred Captains promoted between 1926 and 1931, all of whom, providing they serve for the requisite time on shore and at sea, can now retire with the rank of Rear-Admiral.

Precedence at Inspections.—Their Lordships have decided that the practice of introducing officers in the order given in the Navy List on occasions of ceremony, official inspections, etc., is to be modified. In future, officers are to be introduced in the following order :—(1) the Second in Command of the ship ; (2) commissioned officers being Heads of Departments, in order of seniority ; (3) the remaining officers, in Navy List order. Staff officers, borne additional, will be presented as the Flag or commanding officer considers desirable.

Paymaster Captains.—In view of there being no retirements of Paymaster Captains for age during 1933 special approval has been given for two promotions to that rank to be made each half year in 1933. These officers will be additional to establishment and will be absorbed into the establishment as officers are placed on the retired list in 1934 *et seq.* Officers promoted subsequently will commence their service as Paymaster Captains as " additional " officers until all are gradually absorbed by 1st January, 1936. Until absorbed in the establishment, " additional " officers will be entitled to all the privileges of their substantive rank, but during

employment they will receive pay as Paymaster Commanders, unless holding an appointment for which the rank of Paymaster Captain is authorised by complement; and during periods of unemployment they will receive unemployed pay or half pay as Paymaster Commanders.

SPECIAL ENTRY CADETS.—With a view to Special Entry Cadets becoming commissioned officers at an earlier age, the age limits for entry will be reduced from 17½–18½ to 17–18. This change will be made gradually. For the examinations in June and November, 1933, candidates who are between 17 and 18½ will be allowed to compete; for the examination in June, 1934, and subsequent examinations, the age limits will be 17–18. Further details of the alterations in the regulations were given in fleet orders dated 21st October, 1932.

CADETS' TRAINING SHIP.—H.M.S. "Frobisher" was completed with a full Chatham complement on 1st December, 1932, for service as Cadets' training cruiser. Captain H. A. Forster, M.V.O., from the "Erebus," assumed command on 16th December, and the vessel left for her first cruise on 17th January, during which she was to visit Fayal, Trinidad, Grenada, Barbados, St. Lucia, Antigua and Bermuda. She had on board about 109 Cadets, including one term (39) from Dartmouth College; Cadets who had not finished their term in the "Erebus" (43); the new public school entry who formerly would have joined the "Erebus" at Devonport (15); and the new entry of Paymaster Cadets (12).

LOWER DECK PROMOTION.—An order was issued on 23rd December consolidating all previous orders on the subject of promotion to commissioned rank from the lower deck. It contained fresh detailed instructions for communications ratings, which provide that in the event of such a rating becoming a candidate for commissioned rank he would be allowed to relinquish his specialist rating in order that he might obtain opportunity for further experience in seamanship. It also contained fresh instructions as regards ages of selection for Engine Room Artificer candidates. E.R.A.s, 4th class, will be eligible to be recommended for acting Sub-Lieutenant (E) after eighteen months in their rating, at a minimum age of 21½. The upper age limit for selection will be 25½ years on 1st July for 1933 and 1934, and 24½ years of age thereafter.

COMMANDER EGERTON PRIZE. The Commander Egerton Memorial Prize for 1932 has been awarded to Lieutenant W. J. Lamb, R.N., of H.M.S. "Excellent."

LACK OF INTERPRETERS.—The number of officers qualified as interpreters is still insufficient to meet requirements. Volunteers are required for the study of the following languages in the order stated: Dutch, Modern Greek, Japanese, Russian, the Scandinavian languages, Portuguese, Italian, German, Spanish and French. Arrangements can be made for only a very small number of officers to undertake full time study of Arabic, Russian and Japanese. Every possible facility and encouragement should, therefore, be given to officers who are prepared to study these languages in their own time.

WIDOWS' AND DEPENDANTS' PENSIONS.—As from 10th November, 1932, the normal age limit for the grant or continuance of allowances to daughters and sisters of deceased naval and marine officers shall be eighteen years, the age limit applicable to sons, instead of twenty-one years, subject to the following exception, to which the former age limit of twenty-one years will continue to apply, viz., allowances (other than those granted on an attributable basis) to daughters of officers who have neither (1) been promoted to higher rank on the active list, nor (2) entered the Service subsequent to 10th November, 1932.

TRAVELLING CONCESSIONS.—The railway companies, except the Irish and the London Tube, District and Metropolitan Railways, have agreed to issue tickets to naval personnel travelling on duty or on leave at ordinary single fare for a return journey, and at half ordinary single fare for a single journey. These concessions are available to wives and families of officers and men to whom the former leave travelling concessions applied. The stipulation of a minimum fare of 5s. for officers is now withdrawn.

MATERIAL.

THE 1930 PROGRAMME.—H.M.S. "Orion," the second of the three cruisers of this programme, was launched at Devonport on 24th November by Lady Eyres Monsell, wife of the First Lord of the Admiralty, who was also present. The "Neptune," the third cruiser of the programme, was due to be launched at Portsmouth Dockyard on 31st January.

The eight destroyers of the "Defender" class of this programme have now all run their trials, and were delivered for service at various dates up to the end of January. They have been allocated to the First Flotilla, Mediterranean. The first to proceed overseas were the "Defender" and "Diamond," which left Devonport on 28th December for Malta, where they arrived on 6th January.

The flotilla leader "Duncan" is due for completion at Portsmouth Dockyard on 30th March.

Of the four sloops, the "Falmouth" was commissioned at Devonport on 25th October, and visited her name port from 19th to 21st November, after which she left for China to replace the lost "Petersfield." The "Milford" was commissioned at Devonport on 20th December with a Portsmouth crew for service on the Africa Station in place of the "Verbena." The "Weston" is due to be completed on 23rd February, for the Africa Station. The "Dundee" is due for completion in March, to relieve the "Heliotrope" on the America and West Indies Station.

The "Seahorse," the second of the three submarines of the 1930 programme, was launched at Chatham Dockyard on 15th November.

THE 1931 PROGRAMME.—The names given to the ships of the 1931 programme to be built by contract were officially announced on 18th November in Fleet Orders as follows:—

Cruiser, "Ajax," Vickers-Armstrongs, Ltd., Barrow-in-Furness.

Destroyers ("Eclipse" class), "Eclipse" and "Echo," Denny and Bros., Ltd., Dumbarton; "Electra" and "Encounter," Hawthorn Leslie and Co., Ltd., Hebburn-on-Tyne; "Escapade" and "Escort," Scott's Shipbuilding and Engineering Co., Ltd., Greenock; "Esk" and "Express," Swan, Hunter and Wigham Richardson, Ltd., Wallsend-on-Tyne.

Submarines, "Severn" ("Thames" class), Vickers-Armstrongs, Ltd., Barrow-in-Furness; "Sea Lion" ("Swordfish" class), Cammell Laird and Co., Birkenhead.

Minesweeper sloops ("Halcyon" class), "Halcyon" and "Skipjack," John Brown and Co., Ltd., Clydebank.

The machinery for the cruisers "Amphion" and "Arethusa," building at Portsmouth and Chatham respectively, will be constructed by Messrs. Beardmore and Co., Ltd., Dalmuir, and the Parsons Marine Steam Turbine Co., Ltd., Wallsend-on-Tyne. The machinery for the flotilla leader "Exmouth" at Portsmouth Dockyard will be built by the Fairfield Shipbuilding and Engineering Co., Ltd., Govan.

THE 1932 PROGRAMME.—The contract for H.M. gunboat "Robin," of the 1932 programme, was placed in January with Messrs. Yarrow and Co., Ltd., Scotstoun, Glasgow. This is the only vessel of the programme yet ordered for which a name has been chosen. Tenders for other ships of the programme were invited in January.

MISCELLANEOUS.

NEW STEERING ORDERS.—In Fleet Orders dated 16th September, 1932, the Admiralty gave directions for the application to the Royal Navy of the provisions of the International Convention of 1929 for the safety of life at sea, which are embodied in the Merchant Shipping (Safety and Load Line Convention) Act of 1932. From 1st January, 1933, the steering orders "starboard" and "port" were ordered to be used in the direct sense, i.e., with opposite meanings to those formerly attached to them. Special orders were approved to be used for a transitional period of six months. The use of the word "helm" was ordered to be discontinued.

EXERCISES AND CRUISES.

HOME FLEET.—Ships of the Home Fleet left their home ports on 9th January for the spring cruise, proceeding first to Vigo and Arosa Bay, carrying out trade protection exercises en route. There will be no combined manœuvres with the Mediterranean Fleet this year, but the flotillas of both fleets will exercise together early in March. Nor is a detachment visiting the West Indies as in the last two years. The spring cruise concludes on 28th and 29th March with the return of the ships to their home ports.

MEDITERRANEAN FLEET.—The Mediterranean Fleet left Malta on 12th January for a winter cruise until the end of that month—the first under Admiral Sir William Fisher as Commander-in-Chief. The ships divided for visits to Corfu, Suda Bay, and several other ports, and reassembled for exercises from January 25th to 30th. The spring cruise is arranged to take place from 7th March to 27th April, on the western part of the station.

AMERICA STATION.—After spending Christmas at Bermuda, the three cruisers of the main squadron separated for independent cruises early in January. The "Norfolk," flagship, left for Barbados and West Indian ports. The "Danae" went to United States ports—Miami, Galveston, Houston and Pensacola. The "Dragon" proceeded to San Juan, Porto Rico, and to Georgetown, Trinidad, Jamaica, Belize, Mobile and Tampa. The South American Division spent Christmas at Buenos Aires, and later cruised to other Argentine ports.

EAST INDIES.—The flagship "Hawkins" made a cruise up the Persian Gulf, spending Christmas at Basra and the New Year at Abadan. In mid-January she returned to Trincomalee for two months, and about 1st May is to begin a three months' cruise to Mauritius and East Africa. The "Emerald" and "Enterprise" cruised independently to Indian ports.

CHINA STATION.—The flagship "Kent" left Hong Kong on 18th January for a cruise to Manila. The Fourth Submarine Flotilla is to visit Manila early in March.

TRADE PROTECTION EXERCISE.

From 4 a.m. on Tuesday, 10th January, to 5 p.m. on Thursday, 12th January, an exercise was carried out by the Home Fleet in the Bay of Biscay to demonstrate the capacity of modern cruisers to carry out raids on merchantmen, and to test

the degree of immunity of the latter when proceeding by " evasive routes." The Red fleet consisted of the " Warspite," " Malaya," " Adventure," " Cairo " and " York," commanded by Rear-Admiral R. M. Colvin. The " Adventure " and " Cairo " represented " York " class cruisers. The Blue fleet consisted of the " Dorsetshire " and " Exeter," under the command of Rear-Admiral P. L. H. Noble. The nineteen other vessels taking part represented unarmed merchant ships under the protection of the Red fleet. Among them was the " Nelson," flagship of the Commander-in-Chief, Admiral Sir John Kelly, who acted as Chief Umpire. England and the West Coast of Spain were supposed to be Red colonies, and a fleet of merchant ships was endeavouring to cross the Bay of Biscay to Arosa Bay and Vigo to be mustered in convoy for passage further South. The two raiding cruisers of the Blue fleet had fuelled at the Azores, and had been ordered to raid the merchantmen. The Red fleet commander had been informed that the Blue ships had left the Azores, and he decided, with the ships at his disposal, to endeavour to protect the general trade routes in the Bay. For purposes of economy and exercise, cruiser speed was reduced to 18 knots, battleships to 13 knots, and the " merchantmen " to 10 knots.

According to details circulated to the Press, the result of the exercise was that seven Red merchant ships were captured and one Red cruiser sunk. Including vessels brought back into the exercise after being captured, a total of twenty Red merchant ships entered the exercise area, of which seven, or 35 per cent., were captured. Blue lost two out of three raiding cruisers, as the " Exeter " was sunk but brought back for exercise purposes and sunk again. The " Dorsetshire " apparently took all the seven prizes during the 2½ days' exercises, and although pursued got away unscathed.

THE FLEET AIR ARM

MEDITERRANEAN CRUISE.—The aircraft carriers " Courageous " and " Furious," the former flying the flag of Rear-Admiral R. G. H. Henderson, C.B., left Portsmouth on 5th January, in advance of other ships of the Home Fleet, for their spring cruise. Later in January they exercised with the ships of the Mediterranean Fleet. They were to rejoin the Home Fleet at Gibraltar on 11th March.

FLIGHTS REORGANIZED.—Consequent on the increased provision of aircraft for embarkation in H.M. ships other than aircraft carriers, a reorganization of certain flights was announced by the Air Ministry at the end of December. No. 401 (fleet fighter) Flight was brought up to an establishment of nine aircraft by the amalgamation of the former unit with half of No. 405 (F.F.) Flight, with effect from 2nd January, and is known as No. 401 (F.F.) Flight. The remaining half of No. 405 Flight was brought up to an establishment of five aircraft by the addition of one aircraft from each of Nos. 406 and 407 Flights, and is known as No. 405 (fighter reconnaissance) Flight. The unit will be transferred to the China Station at a later date and will provide aircraft for the Fifth Cruiser Squadron on that station.

No. 403 (F.F.) Flight will continue with an establishment of nine aircraft, and will be allocated to H.M.S. " Hermes." Until the arrival on the China Station of No. 405 (F.R.) Flight mentioned above, No. 403 Flight will continue to supply aircraft for embarkation in ships of the Fifth Cruiser Squadron, China Station.

No. 406 (F.F.) Flight will be established with two aircraft only, and reserved for the Fourth Cruiser Squadron, East Indies Station, as from 2nd January. The

remaining aircraft of this flight has been absorbed into No. 405 Flight, as mentioned above.

No. 407 (F.F.) Flight will be established on a five-aircraft basis, as from 2nd January, the remaining aircraft being absorbed into No. 405 Flight. The unit, having been re-equipped with " Osprey " aircraft, will be known as No. 407 (fighter reconnaissance) Flight, and will be reserved for the Second Cruiser Squadron, Home Fleet.

DOMINION NAVIES

ROYAL CANADIAN NAVY

First Captain.—Captain P. W. Nelles, R.C.N., who was promoted in the New Year list, is the first officer to reach post rank in the Royal Canadian Navy after serving up through the lower grades of that service. He entered the Naval College of Canada (now closed) as a cadet in 1908. He was commissioned as Lieutenant, R.C.N., in July, 1914, and served during the War in the cruisers " Suffolk " and " Antrim." He qualified at the R.N. Staff College in 1925, and has now been appointed for the course at the Imperial Defence College in London.

New Cadets.—Officers for the Royal Canadian Navy must in the first instance join as Naval Cadets and proceed to England for training. This has kept down somewhat the number of new entries. The last Report of the Naval Service for the fiscal year ended 31st March, 1932, states that " the urgent requirement of the service is a greater number of junior officers." During the year to which this report refers, no candidates were successful in passing the required tests. Since the report appeared, however, nine candidates have been examined, and three have passed, and joined H.M.S. " Erebus " on 16th September, 1932—two as Cadets, and one as a Paymaster Cadet.

ROYAL AUSTRALIAN NAVY

Unrest Over Pay.—In November, 1932, there were manifestations of unrest owing to the reductions in pay under the Financial Emergency Act, which became effective on 16th July, 1931, and some 200 naval ratings held a meeting on shore at Melbourne. On 9th November, 1932, Sir George Pearce, Minister of Defence, referred to a " dastardly, sinister plot " to create disaffection in the Australian Navy by false propaganda. Representations had been made to the Government concerning the pay reductions before the protest meeting, and the Government had decided to rectify certain anomalies and increase allowances. But the same day attempts were made by agitators to use the grievances as a means of seducing the loyalty of the men. After the officers had urged the men not to do anything which would suggest a mutiny, the ratings returned to their ships, which sailed for Jervis Bay the same evening according to programme.

FOREIGN NAVIES

FRANCE

French Naval Policy.—In a speech to the officers and men of the battleship " Lorraine " at Toulon on 7th January, M. Georges Leygues, Minister of Marine, said that the entry into service of the German battleship " Deutschland " and the

construction of two similar German warships constituted a menace to the French lines of communication, which were second only to those of the British Empire. "It is necessary to guard against this danger," he added, "and a rapid decision is required. Therefore we gave the order to begin work on the battleship 'Dunkerque.'" M. Leygues stated that in the latter months of 1932 French naval activity had been greatly intensified. This was indicated by the execution of new naval programmes, the reorganization of the forces, intensified training of divisions and the resumption of training cruises.

THE "DUNKERQUE" LAID DOWN.—The new battleship "Dunkerque," ordered on 26th October, was officially begun on 28th December at Brest. She will be of 26,500 tons, and it has now been officially announced that she will be armed with eight 13-in. guns in two quadruple turrets and sixteen 6.2-in. guns mounted primarily to cover retreat. It is hoped that the "Dunkerque" will be ready to be launched in the Spring of 1934.

This is the first French capital ship to be laid down for twenty years, and since the "Bretagne" class were begun in 1912. The "Béarn," laid down in 1914, was suspended and subsequently completed as an aircraft carrier.

FLOTILLA LEADERS.—No new flotilla leaders were ordered during 1932. Six ordered in 1931 are in hand: "Le Fantasque" and "L'Audacieux" at Lorient, "Le Malin" and "Le Terrible" at the yard of the Forges et Chantiers, "Le Triomphant" at Caen, and "L'Indomptable" at Dunkirk. In these vessels of 2,569 tons and 37 knots' speed, the gun armament will be similar to earlier classes, viz., five 5.5-in. and four smaller guns, but there will be nine instead of six torpedo tubes. Six earlier leaders, ordered in 1930, are at the trial stage, and the "Cassard" in September, 1932, reached 43.4 knots.

NEW SUBMARINES.—The submarine "Le Glorieux," laid down in 1930, was launched at Cherbourg on 29th November in an advanced stage of construction. She is similar to the "Héros" and "Centaure," launched on 14th October. The displacement is 1,379 tons; length 301 ft.; crew, 54 officers and men. The armament includes one 3.9-in. gun, one smaller A.A. gun, and eleven torpedo tubes.

The large cruiser submarine, "Surcouf," returned to Cherbourg on 15th November, after an endurance cruise of 5,000 miles from Cherbourg to Casablanca, Agadir, Konakri and Dakar.

VISIT TO MALTA.—A division consisting of the cruiser "Tourville" and the flotilla leader "Vautour" arrived at Malta on 30th November, and left on 3rd December. Vice-Admiral Dubois, in command and his officers were entertained at a dinner party at the Palace, a dance at Admiralty House, and a *thé dansant* at the Maltese Club.

SUBMARINE COURT-MARTIAL.—At a Court-Martial at Cherbourg on 4th November, Lieutenant-Commander Couespel du Mesnil, who was in command of the submarine "Prométhée" when she sank in July with the loss of sixty-five lives while undergoing surface trials off Cherbourg, was acquitted. At the time of the accident the submarine, although nominally under the command of the accused, was virtually under the charge of the constructor's engineer.

GERMANY

NEW ARMOURED SHIPS.—Under the command of Captain Fischer, the new battleship "Deutschland" began her trials at Kiel on 19th January. She is due

to be docked at Wilhelmshaven on 1st March, and to be commissioned in April with the crew of the "Emden." The second ship of this class, the "Ersatz Lothringen," was laid down at Wilhelmshaven in June, 1931. The third, the "Ersatz Braunschweig," was begun at Wilhelmshaven in October.

ATTACHÉS REAPPOINTED.—As from 1st April, Naval Attachés will be appointed to the German Embassies in London, Paris and Rome, and Military Attachés to the Embassies and Legations in London, Paris, Washington, Rome, Prague, Warsaw and Moscow. The officer appointed as Naval Attaché in London is Captain Erwin Wassner, late in command of the cruiser "Karlsruhe."

"EMDEN'S" NAMEPLATE TO BE RETURNED.—The nameplate of the "Emden," the light cruiser which did so much damage to British shipping before she was destroyed by H.M.A.S. "Sydney," on 9th November, 1914, is being returned to Germany by the Government of Australia as a token of good will.

NEW SAILING SHIP FOR CADETS.—A sailing training ship to replace the "Niobe," which capsized on 26th July last, has been ordered and will be built by Blohm and Voss of Hamburg. The vessel will be barque rigged, will displace about 1,500 tons, and have an overall length of 239 ft. 6 in. An auxiliary motor will give a speed of about 8 knots. The complement will be 226.

ITALY

NEW 10,000-TON CRUISERS.—On 19th December, during trials in the Tyrrhenian Sea, the cruiser "Bolzano" reached a speed of 38 knots, or two knots above her designed speed. The "Bolzano" is the seventh and last of the 10,000-ton cruisers with 8-in. guns. They fall into two categories, three of the "Trento" type, of which the "Bolzano" is one, with 150,000 h.p. and 36 knots; and four of the "Zara" type, with 95,000 h.p. and 32 knots. The armament is the same in both types, eight 8-in. and sixteen 3.9-in. A.A. guns.

1932-33 PROGRAMME.—The construction programme for 1932-33 provides for about 30,000 tons of new vessels. On 2nd December, 1932, Signor Mussolini gave orders to the Ministry of Marine to proceed with the construction of two 7,000-ton cruisers and two torpedo boats, representing the first section of this programme. The funds for construction are to come from normal Budget appropriations.

JAPAN

NEW NAVY MINISTER.—Admiral Okada, Minister of Marine, resigned that post on 8th January, owing to illness. Admiral Osumi has been appointed Minister in his place.

DESTROYER LOST.—The destroyer "Sawarabi" foundered in a storm about 100 miles north-east of Formosa on 5th December. Only 16 officers and men were rescued, and 104 others, who were below deck with the hatches battened down owing to the storm, lost their lives when the vessel turned turtle. The "Sawarabi" was a vessel of 820 tons, 31½ knots, and three 4.7-in. guns, laid down in 1922 and completed in 1924.

MEXICO

NEW CONSTRUCTION.—The Mexican Government has decided to modernise the defences of the country by purchasing fifteen new war vessels to be built in Spain, and the construction of twenty fighting aircraft. The session of the Cortes

at Madrid on 22nd December authorised the Government to open a credit of 70 million pesetas, or £3,600,000 at par, in favour of Mexico to cover the construction of the vessels to be built in Spanish shipyards.

NETHERLANDS

NEW CONSTRUCTION.—The Dutch Government has decided to adopt the latest type of Yarrow high-pressure water-tube boiler in the new cruiser to be built by Wilton-Fijenoord of Rotterdam (see the last issue of the JOURNAL, page 867). A few years ago Messrs. Yarrow received the order for the designs of eight torpedo boat destroyers to be built for the Dutch Navy under their technical supervision, and the high pressure boilers of the new cruiser will be generally similar to those in the destroyers.

PORTUGAL

NEW CONSTRUCTION.—On 4th December, it was announced from Lisbon that the Government had decided not to order an aircraft carrier, but to place contracts for two first-class sloops with Messrs. Hawthorn Leslie & Co., Hebburn-on-Tyne; two submarines with Vickers-Armstrongs, Ltd., Barrow; and one destroyer with Yarrow & Co., Scotstoun. These contracts were obtained by the British firms in the face of strong foreign competition. The Government had already placed orders for eleven De Havilland "Moth" aeroplanes.

SOVIET RUSSIA

INCREASE OF PAY.—It is reported that the Council of the People's Commissars have approved an increase of pay to all officers and men of the fighting services. The increases, which it is stated are to be permanent, vary from 40 to 100 per cent.

PURCHASE OF GERMAN SHIPPING.—The Soviet Government has purchased eight ships belonging to the North German Lloyd, amounting to 32,792 gross registered tonnage.

UNITED STATES

NEW CRUISER ORDERED.—On 20th December, the U.S. Navy Department announced that the tender of the Bethlehem Shipbuilding Corporation had been accepted at 8,196,000 dollars (£1,600,000) for the construction of a 10,000-ton cruiser with 8-in. guns. This ship will be the sixteenth 8-in. gun cruiser. Under the London Treaty the U.S. Government agreed to complete not more than fifteen such vessels by 31st December, 1936, but the construction of three more, making a total of eighteen, was made optional. If proceeded with, these three additional vessels were to be laid down in 1933, 1934 and 1935 respectively. Building work on the ship ordered in December is to start after 31st March, 1933.

NICARAGUA WITHDRAWAL.—The withdrawal of United States Marines from Nicaragua was notified by the State Department at Washington on 1st January, on which date the inauguration took place of Senor Sacasa as President of Nicaragua. The statement added, "To-day the U.S. Marines leave Nicaragua. No American armed forces will remain in Nicaragua either as instructors in the constabulary, as legation guards, or in any other capacity whatsoever." The U.S. Government had exerted itself since 1911 to restore order and stability in the country and to place its financial position on a sound basis.

YUGOSLAVIA

NEW PROGRAMME.—A new naval programme to cost about three millions sterling has been approved. The programme includes two flotilla leaders, six destroyers, two submarines and six coastal motor boats.

In a message published on 12th December, the Rome correspondent of the *Daily Telegraph* said that the report that Yugoslavia was to spend £3,000,000 on additions to her fleet had aggravated the bad feeling recently revived in Rome by the destruction at Trogia of an ancient monument recalling the former allegiance of Dalmatia to the Republic of Venice. The Rome *Tribuna* draws attention to the severe economic crisis through which Yugoslavia is passing and to her policy of " living on loans." With France in mind, it asks " Who will generously provide these three millions. In a word—who pays ? "

ARMY NOTES

HOME

The Army Council

The King, on the recommendation of the Secretary of State for War, has approved the appointment of General Sir Archibald A. Montgomery-Massingberd K.C.B., K.C.M.G., Colonel Commandant, Royal Artillery, Aide-de-Camp General, to be Chief of the Imperial General Staff, in succession to Field-Marshal Sir George F. Milne, G.C.B., G.C.M.G., D.S.O., D.C.L., LL.D., Colonel Commandant, Royal Artillery (Master Gunner, St. James's Park); and of Sir Cecil F. Romer, K.C.B., K.B.E., C.M.G., General Officer Commanding-in-Chief, Southern Command, to be Adjutant-General to the Forces, in succession to General Sir Archibald A. Montgomery-Massingberd. These changes will take place on 19th February.

Appointments and Promotions

H.M. The King has approved of the following appointments :—Colonel E. M. S. Charles, C.M.G., D.S.O., *p.s.c.*, to be A.D.C. to the King, in succession to Colonel L. C. Jackson, C.M.G., D.S.O., *p.s.c.*, retired; Major-General E. A. Walker, M.B., F.R.C.S.Edin., Indian Medical Service, Honorary Surgeon to the Viceroy of India, to be Honorary Surgeon to The King, in succession to Major-General H. Boulton, C.B., C.B.E., M.D., Indian Medical Service, retired.

Field Marshal Sir George F. Milne, C.I.G.S., to be Constable of the Tower of London, in succession to the late Field-Marshal Lord Methuen.

Field-Marshal H.R.H. The Duke of Connaught and Strathearn, K.G., K.T., K.P., G.C.B., G.C.S.I., G.C.M.G., G.C.I.E., G.C.V.O., G.B.E., V.D., Colonel, Grenadier Guards, and Royal Army Service Corps, Colonel-in-Chief, The Highland Light Infantry (City of Glasgow Regiment), The Rifle Brigade (Prince Consort's Own), and the Royal Army Medical Corps, Personal Aide-de-Camp to The King, to be Colonel-in-Chief instead of Colonel of the Royal Army Service Corps.

Major-General H.R.H. The Duke of York, Earl of Inverness, K.G., K.T., G.C.M.G., G.C.V.O., Colonel-in-Chief, 11th Hussars (Prince Albert's Own), The Somerset Light Infantry (Prince Albert's), The East Yorkshire Regiment, Royal Army Ordnance Corps, and The Leicestershire Yeomanry (Prince Albert's Own), Personal Aide-de-Camp to The King, to be Colonel, Scots Guards, in succession to the late Field-Marshal The Lord Methuen.

Major-General H. L. Pritchard, C.B., C.M.G., D.S.O., to be Colonel Commandant, Royal Engineers, in succession to Major-General Sir William Salmond, K.C.B., retired pay (deceased).

Colonel (Honorary Brigadier-General) W. F. Clemson, C.M.G., D.S.O., retired pay, to be Colonel, The York and Lancaster Regiment, in succession to the late Field-Marshal The Viscount Plumer.

Major-General O. L. Robinson, C.B., C.M.G., retired pay, late Royal Army Medical Corps, to be Colonel Commandant, Royal Army Medical Corps, in succession to the late Lieutenant-General Sir Charles H. Burtchaell; Major-General

C. D. R. Watts, C.B., C.M.G., to be Colonel Commandant, Royal Army Ordnance Corps, in succession to the late Major-General Sir Charles M. Mathew, K.C.M.G., C.B., D.S.O.

Lieutenant-General Sir Percy P. de B. Radcliffe, K.C.B., K.C.M.G., D.S.O., Colonel Commandant, Royal Artillery, General Officer Commanding-in-Chief, Scottish Command, to be General Officer Commanding-in-Chief, Southern Command, in succession to General Sir Cecil F. Romer, K.C.B., K.B.E., C.M.G.; Lieutenant-General A. R. Cameron, C.B., C.M.G., Colonel, The Black Watch (Royal Highlanders), to be General Officer Commanding-in-Chief, Scottish Command, in succession to Lieutenant-General Sir Percy Radcliffe.

Major-General C. J. C. Grant, C.B., D.S.O., has been appointed General Officer Commanding, London District, in succession to the late Major-General A. B. E. Cator, C.B., D.S.O.; Major-General J. K. Dick-Cunyngham, C.B., C.M.G., D.S.O., to be Commander of the 53rd (Welsh) Division, Territorial Army, in succession to Major-General C. J. C. Grant, C.B., D.S.O.

Major-General A. W. Bartholomew, C.M.G., C.B.E., D.S.O., to be Inspector of the Royal Artillery, The War Office, with effect from 27th May, 1933, in succession to Major-General F. A. Wilson, C.B., C.M.G., D.S.O., whose tenure of the appointment expires on the date mentioned.

Major-General O. H. Delano-Osborne, C.B., C.M.G., to succeed Major-General G. J. Farmer, C.B., C.M.G., as Lieutenant-Governor and Secretary of the Royal Hospital, Chelsea, on 19th May, 1933, when the latter's tenure of the appointment expires.

H.M. The King has approved the promotion of General The Earl of Cavan, K.P., G.C.B., G.C.M.G., G.C.V.O., G.B.E., retired pay, Colonel, Irish Guards, and Colonel, The Bedfordshire and Hertfordshire Regiment, to the rank of Field-Marshal, in succession to the late Field-Marshal The Lord Methuen, G.C.B., G.C.M.G. G.C.V.O., LL.D., Colonel, Scots Guards, Constable of the Tower of London.

Colonel K. G. Buchanan, C.M.G., D.S.O.; Colonel R. M. Luckock, C.M.G., D.S.O.; Colonel W. G. S. Dobbie, C.B., C.M.G., D.S.O.; Colonel A. J. Hunter, C.M.G., D.S.O., M.C., to be Major-Generals.

Change in Designation

H.M. The King has approved of the designation of the 15th/19th Hussars being changed to "15th The King's Royal Hussars." This title will be for official correspondence "15th Hussars" and the abbreviated title "15th H."

TERRITORIAL ARMY

Coast Defence Reorganization

As already announced in The Journal (v. Army Notes for November, 1932, p. 871) it has been decided to entrust to the Territorial Army the entire responsibility of manning the Coast Defences of Great Britain.

The attached Tables give the detailed re-organization to bring the scheme into effect, involving:—

(i) The definite allotment of Coast Defence Units, Territorial Army, to the defence of the various ports;
(ii) The provision of the necessary Anti-Aircraft Units;
(iii) The consequential adjustments in those Units affected by the scheme.

TERRITORIAL ARMY

Coast Defence Formation	Formed from	Remarks
HEAVY BRIGADES, ROYAL ARTILLERY		
Devonshire and Cornwall Heavy Brigade:		
Headquarters	Headquarters, Devonshire Heavy Brigade	Headquarters, Cornwall Heavy Brigade to be disbanded.
157th (Devonshire) Heavy Battery	157th Heavy Battery	
158th (Devonshire) Heavy Battery	158th Heavy Battery	
164th (Cornwall) Heavy Battery	164th Heavy Battery	
Dorsetshire Heavy Brigade:		
Headquarters	Headquarters, Dorsetshire Heavy Brigade	
179th Heavy Battery	179th Heavy Battery	
180th Heavy Battery	180th Heavy Battery	
Hampshire Heavy Brigade:		
Headquarters	Headquarters, Hampshire Heavy Brigade	
153rd Heavy Battery	153rd Heavy Battery	
154th Heavy Battery	154th Heavy Battery	
155th Heavy Battery	155th Heavy Battery	
156th Heavy Battery	156th Heavy Battery	
Kent and Sussex Heavy Brigade:		
Headquarters	New formation	
159th (Sussex) Heavy Battery	159th Heavy Battery	
168th (Kent) Heavy Battery	168th Heavy Battery	
170th (Kent) Heavy Battery	170th Heavy Battery	
Thames and Medway Heavy Brigade:		
Headquarters	Headquarters, Kent Heavy Brigade	
167th (Kent) Heavy Battery	167th Heavy Battery	
169th (Kent) Heavy Battery	169th Heavy Battery	
175th (Essex) Heavy Battery	175th Heavy Battery	
Suffolk Heavy Brigade:		
Headquarters	New formation	
166th Heavy Battery } 176th Heavy Battery }	176th Heavy Battery divided	
East Riding Heavy Brigade:		
Headquarters	Headquarters, East Riding Heavy Brigade	
182nd Heavy Battery	182nd Heavy Battery	
183rd Heavy Battery	183rd Heavy Battery	
Forth Heavy Brigade:		
Headquarters	Headquarters, Forth Heavy Brigade	
161st Heavy Battery	161st Heavy Battery	
162nd Heavy Battery	162nd Heavy Battery	
163rd Heavy Battery	163rd Heavy Battery	
Lancashire and Cheshire Heavy Brigade:		
177th Heavy Battery	177th Heavy Battery	
178th Heavy Battery	178th Heavy Battery	
Pembrokeshire Heavy Brigade:		
184th Heavy Battery	184th Heavy Battery	
185th Heavy Battery	185th Heavy Battery	

Coast Defence Formation	Formed from	Remarks
MEDIUM BRIGADES, ROYAL ARTILLERY		
58th (Suffolk) Medium Brigade		
Headquarters	Headquarters, 58th (Essex and Suffolk) Medium Brigade	
229th (Suffolk) Medium Battery	229th (Suffolk) Medium Battery	
230th (Suffolk) Medium Battery	230th (Suffolk) Medium Battery	
231st (Suffolk) Medium Battery	231st (Suffolk) Medium Battery	
232nd (Suffolk) Medium Battery	410th (Suffolk) Field Battery	From 103rd (Suffolk) Field Brigade. Headquarters, 103rd Field Brigade is disbanded
51st (Midland) Medium Brigade		
Headquarters	New formation	To be at Stoke
204th (Warwickshire) Medium Battery	204th (Warwickshire) Medium Battery	Now attached to 100th (Worcestershire and Oxfordshire Yeomanry) Field Brigade
215th (Staffordshire) Medium Battery	215th (1st Staffordshire) Medium Battery	From 54th (West Riding and Staffordshire) Medium Brigade
216th (Staffordshire) Medium Battery	216th (2nd Staffordshire) Medium Battery	From 54th (West Riding and Staffordshire) Medium Brigade
54th (Durham and West Riding) Medium Brigade:		
Headquarters	Headquarters, 54th (West Riding and Staffordshire) Medium Brigade	
213th (1st West Riding) Medium Battery	213th (1st West Riding) Medium Battery	
214th (2nd West Riding) Medium Battery	214th (2nd West Riding) Medium Battery	
219th (Durham) Medium Battery ..	219th (Durham) Medium Battery	From 55th (Northumbrian) Medium Brigade
186th (Durham) Medium Battery ..	186th Heavy Battery	
55th (Northumbrian) Medium Brigade:		
Headquarters	Headquarters, 55th (Northumbrian) Medium Brigade	
217th (Durham) Medium Battery ..	217th (Durham) Medium Battery	
218th (Durham) Medium Battery ..	218th (Durham) Medium Battery	
220th (Durham) Medium Battery ..	220th (Durham) Medium Battery	
152nd (Tynemouth) Medium Battery	152nd Heavy Battery	
UNBRIGADED HEAVY BATTERIES, ROYAL ARTILLERY		
Durham Heavy Brigade	187th Heavy Battery, Durham Heavy Brigade	
Tynemouth Heavy Brigade	151st Heavy Battery, Tynemouth Heavy Brigade	
Clyde Heavy Brigade	171st Heavy Battery, Clyde Heavy Brigade	
Glamorgan Heavy Brigade	181st Heavy Battery, Glamorgan Heavy Brigade	

Coast Defence Formation	Formed from	Remarks
ANTI-AIRCRAFT BRIGADES, ROYAL ARTILLERY		
56th Cornwall Anti-Aircraft Brigade:		
Headquarters	Headquarters, 51st (Cornwall and Warwickshire) Medium Brigade	
201st (Cornwall) Anti-Aircraft Battery	201st (Cornwall) Medium Battery	
202nd (Cornwall) Anti-Aircraft Battery	202nd (Cornwall) Medium Battery	
203rd (Cornwall) Anti-Aircraft Battery	203rd (Cornwall) Medium Battery	
165th (Cornwall) Anti-Aircraft Battery	165th Heavy Battery	
57th Wessex Anti-Aircraft Brigade:		
Headquarters	Headquarters, 54th (Wessex) Field Brigade	
213th (Hampshire) Anti-Aircraft Battery	213th (Hampshire) Field Battery	
214th (Hampshire) Anti-Aircraft Battery	214th (Hampshire) Field Battery	
215th (Hampshire) Anti-Aircraft Battery	215th (Hampshire) Field Battery	
219th (Isle of Wight) Anti-Aircraft Battery	219th (Isle of Wight) Field Battery	
UNBRIGADED ANTI-AIRCRAFT BATTERIES, ROYAL ARTILLERY		
166th (City of Rochester) Anti-Aircraft Battery	166th (City of Rochester) Heavy Battery	
409th (Suffolk) Anti-Aircraft Battery ..	409th (Suffolk) Field Battery	
FIELD BRIGADES, ROYAL ARTILLERY		
95th (Hampshire Yeomanry) Field Brigade:		
Headquarters	Headquarters, 95th (Hampshire Yeomanry) Field Brigade	
218th (Bournemouth) Field Battery	218th (Bournemouth) Field Battery	
377th (Winchester) Field Battery ..	377th (Winchester) Field Battery	
378th (Hampshire R.H.A.) Field Battery	378th (Hampshire R.H.A.) Field Battery	
216th (Cosham) Field Battery ..	216th (Hampshire) Field Battery	From 54th (Wessex) Field Brigade
85th (East Anglian) Field Brigade:		
Headquarters	Headquarters, 85th (East Anglian) Field Brigade	
337th (Essex) Field Battery	337th (Essex) Field Battery	
338th (Essex) Field Battery	338th (Essex) Field Battery	
340th (Essex) Field Battery	340th (Essex) Field Battery	
213th (Essex) Field Battery	232nd (Essex) Medium Battery	From 58th (Essex and Suffolk) Medium Brigade
104th (Essex Yeomanry) Field Brigade:		
Headquarters	Headquarters, 104th (Essex Yeomanry) Field Brigade	
413th (Essex Yeomanry) Field Battery	413th (Essex Yeomanry) Field Battery	
414th (Essex Yeomanry) Field Battery	414th (Essex Yeomanry) Field Battery	
339th (Essex R.H.A.) Field Battery	339th (Essex R.H.A.) Field Battery	From 85th (East Anglian) Field Brigade

Coast Defence Formation	Formed from	Remarks
FORTRESS ENGINEERS, ROYAL ENGINEERS		
Devonshire and Cornwall (Fortress) Royal Engineers:		
Headquarters	Headquarters, Devonshire (Fortress) Royal Engineers	
No. 1 (Devonshire) (Electric Lights and Works) Company	No. 1 (Works) Company, Devonshire (Fortress) Royal Engineers	
No. 2 (Devonshire) (Electric Lights and Works) Company	No. 2 (Lights) Company, Devonshire (Fortress) Royal Engineers	
No. 3 (Devonshire) (Electric Lights and Works) Company	No. 3 (Lights) Company, Devonshire (Fortress) Royal Engineers	
No. 4 (Cornwall) (Anti-Aircraft Searchlight) Company	No. 1 Company, Cornwall (Fortress) Royal Engineers	
Dorsetshire (Fortress) Royal Engineers:		
No. 1 (Electric Lights and Works) Company	No. 1 (Works) Company, Dorsetshire (Fortress) Royal Engineers	
No. 2 (Anti-Aircraft Searchlight) Company	No. 2 (Lights) Company, Dorsetshire (Fortress) Royal Engineers	
Hampshire (Fortress) Royal Engineers:		
Headquarters	Headquarters, Hampshire (Fortress) Royal Engineers	
No. 1 (Anti-Aircraft Searchlight) Company	Re-organisation of Hampshire (Fortress) Royal Engineers	
No. 2 (Anti-Aircraft Searchlight) Company		
No. 3 (Electric Lights) Company		
No. 4 (Electric Lights and Works) Company		
Cinque Ports (Fortress) Royal Engineers:		
No. 1 (Electric Lights and Works) Company	Nos. 1, 2 and 3 (Lights) Companies, Cinque Ports (Fortress) Royal Engineers re-organised	
No. 2 (Anti-Aircraft Searchlight) Company		
Kent (Fortress) Royal Engineers:		
No. 1 (Thames) (Electric Lights and Works) Company	New formation	
No. 2 (Medway) (Electric Lights and Works) Company		
Essex (Fortress) Royal Engineers:		
No. 1 (Anti-Aircraft Searchlight) Company	No. 1 (Lights) Company Essex (Fortress) Royal Engineers	
Suffolk (Fortress) Royal Engineers:		
No. 1 (Electric Lights and Works) Company	New unit	
East Riding (Fortress) Royal Engineers:		
No. 1 (Electric Lights and Works) Company	Amalgamation of Nos. 1 (Works), 2 (Lights) and 3 (Lights) Companies, East Riding (Fortress) Royal Engineers	

Coast Defence Formation	Formed from	Remarks
North Riding (Fortress) Royal Engineers:		
No. 1 (Electric Lights and Works) Company	No. 1 (Lights) Company, North Riding (Fortress) Royal Engineers	
Tyne Electrical Engineers:		
No. 1 (Electric Lights and Works) Company	No. 1 (Lights) Company, Tyne Electrical (Fortress) Royal Engineers	
City of Edinburgh (Fortress) Royal Engineers:		
No. 1 (Electric Lights and Works) Company	Amalgamation of Nos. 1 (Works), 2 (Lights) and 3 (Lights) Companies, City of Edinburgh (Fortress) Royal Engineers	
Renfrewshire (Fortress) Royal Engineers:		
No. 1 (Electric Lights and Works) Company No. 2 (Electric Lights and Works) Company	No. 1 Company, Renfrewshire (Fortress), Royal Engineers. Divided into 2 Companies	
Lancashire (Fortress) Royal Engineers:		
No. 1 (Electric Lights and Works) Company	No. 1 Company, Lancashire (Fortress) Royal Engineers	
Carmarthenshire (Fortress) Royal Engineers:		
No. 1 (Electric Lights and Works) Company	No. 1 Company, Carmarthenshire (Fortress) Royal Engineers	
No. 2 (Anti-Aircraft Searchlight) Company	New company	
Glamorganshire (Fortress) Royal Engineers:		
No. 1 (Electric Lights and Works) Company	No. 1 Company, Glamorganshire (Fortress) Royal Engineers	

DOMINION FORCES

Alliances.—H.M. The King has approved of the following alliances:—

1. 20th Light Horse Regiment, Australian Military Forces, to the 14th/20th Hussars.

2. The Sault Ste. Marie Regiment, Non-Permanent Active Militia of Canada, to the Hampshire Regiment.

3. The Perth Regiment, Non-Permanent Active Militia of Canada, to the Otago Regiment of the New Zealand Military Forces, to the 26th Battalion, Australian Military Forces, and to the 10th Infantry (Witwatersrand Rifles) of the Union of South Africa.

4. The Colchester and Hants Regiment, Non-Permanent Active Militia of Canada, to the South Staffordshire Regiment.

As a mark of honour and in order to strengthen the alliance already existing, H.M. The King has given permission to the 37th/52nd Battalion, Australian Infantry, to wear the regimental buttons and badges of the Queen's Own Cameron Highlanders.

INDIAN ARMY

Command of Kohat District.

Major-General D. I. Shuttleworth, C.B., C.B.E., D.S.O., *p.s.c.*, to command the Kohat District in succession to Major-General H. B. D. Baird, C.B., C.M.G., C.I.E., D.S.O., I.A., *p.s.c.*

Promotion.

Major-General J. F. S. D. Coleridge, C.B., C.M.G., D.S.O., I.A., to be Lieutenant-General.

The Situation in Dir and Bajaur.

At the end of September the Shamozais refused to accept the Government terms and again appealed for assistance to the Salarzais and Mamunds. This, however, was apparently not forthcoming in spite of the efforts of the Faqir of Alingar. Meanwhile, the Chitral relief was completed without further incident, and the relieved troops reached India on 15th October.

Throughout this period air bombing of the Shamozai villages had continued. In view, however, of the approach of another Shamozai *jirga* to meet the Political Agent, Malakand, to discuss terms, it was decided to reduce the severity of the air action during negotiations. One half of this *jirga* arrived on 17th October and the remainder on 25th October. Their attitude was submissive, and, in view of their losses of property as the result of aerial bombardment, the Government of India decided to remit the fine previously imposed. As a result of the negotiations on 26th October the *jirga* made formal submission, and swore on the Koran in a mosque to abstain from further hostilities. In addition, they gave a written undertaking :—

(*a*) Not to permit the passage of a hostile *lashkar* through their country ;

(*b*) Not to allow the Faqir of Alingar into their country ; and

(*c*) To undergo any punishment which the Government might impose, should they break any of these conditions.

On 28th October, a Salarzai *jirga* was interviewed at Chakdarra. Their attitude was satisfactory, whilst on the same date the Mamunds suggested sending a *jirga* to meet the Political Agent, Malakand.

All of the above facts indicate that the tribesmen are, at any rate for the moment, heartily tired of hostilities, and the cold shoulder shown to the Faqir of Alingar, wherever he has gone, indicates that they lay the blame for their misfortunes to a certain extent on him.

FOREIGN

(*Published by permission of the General Staff*).

FRANCE

Army Reorganization.—In view of the approaching completion of the French frontier fortifications, certain measures of reorganization in the French infantry will come into effect by the end of the summer of 1933.

As a result French infantry regiments will in future be of five types and of seven different peace establishments. These types with their peace establishment are as follows :—

Type normal	1,576
Type renforcé No. 1	2,285
Type renforcé No. 2	1,754
Type mixte	2,297
Type région fortifiée—	
(*a*) Having 6 battalions *type région fortifiée*	2,919
(*b*) Having 4 battalions *type région fortifiée* and 1 battalion *type normal*..	2,437
(*c*) Having 3 battalions *type région fortifiée* and 2 battalions *type normal*	2,421

Regiments of the *type normal*, *type renforcé No.* 1 and *type renforcé No.* 2 will have the normal organization of three homogeneous battalions. Regiments of the *type mixte* will consist of four battalions, of which two battalions will be of the *type renforcé* and two battalions of the *type normal*. All battalions of the above four types of regiment will have the normal organization of one machine gun company and three light automatic and rifle companies and will differ only in their peace establishments.

The battalions of the *type région fortifiée* represent an entirely new type of organization, designed to allow these battalions to occupy the frontier fortifications. Each battalion will consist of 4 companies each of 2 machine gun sections and 1 light automatic section ; a machine gun section consisting of 2 groups each of 2 guns and a light automatic section consisting of 4 groups each with 1 light automatic. A total of 32 machine guns and 16 light automatics per battalion.

Calling up of the Conscript Classes.—The Minister of War published on 26th August a decree which stated that in order to effect economies and reduce the strength of the army, the half contingent of the 1932 class, to be called up in April, 1933, will consist of the men born during the first four months of the year (1912) only.

The normal number of men available in a twelve month contingent varies from 210,000 to 240,000, and includes the personnel required for the Air Force. The effect of this measure will be to reduce the contingent to be called up in April, 1933, by between 20,000 and 30,000 men. If this procedure is continued, it will have the further effect of providing additional men to make up for the smaller number of conscripts who will be available during the years 1936-40, owing to the low birth rate during the war years, 1915–1919.

Ecole Spéciale Militaire, St. Cyr.—The number of admissions to the Military College at Saint Cyr has been reduced from 400 to 335. This is one of the savings agreed to in the law passed on 15th July, 1932, in which a considerable reduction in military expenditure was made. This reduction in numbers of admission happens to coincide with an increase in the numbers of candidates who are about to present themselves for the examination.

The number of admissions to the other military schools which come under the Ministry of War are being similarly reduced.

GERMANY

NATIONAL PHYSICAL TRAINING.—On 14th September, 1932, a decree was published instituting a scheme for national physical training, which reads :—

"For many years I have followed with especial interest the efforts which have been made towards physical training. The hardening of the body and the training of youth to discipline, love of order, comradeship and self-sacrifice are tasks which the State must take upon itself. The solution of this problem will be settled by co-operation with all those organizations of the most varied types which have devoted themselves to this work, and I thank them for what they have done.

In order to co-ordinate in the future the work of all the above organizations, I convene herewith a National Board for the Physical Training of Youth.

I appoint the Minister of the Interior as President and General Edwin von Stülpnagel as Executive President. I empower the Minister of the Interior to call together, as members of the National Board, such suitable persons as possess special qualifications in this direction, to lay the resolutions of the Board before me for my approval and to take all the necessary measures for the putting into operation of this decree, taking concerted action with the other ministries affected thereby."

(Signed) VON HINDENBURG; VON PAPEN; FREIHERR VON GAYL.

The following explanatory note was published with the decree :—

"The National Board for Physical Training which has come into being as a result of this decree will not interfere with the freedom of the organizations already in existence or act in any way contrary to those institutions which have taken on themselves the development of gymnastics and games; on the contrary, those organizations, who wish to be organized on professional, political or religious grounds but who have paid or will in the future pay special attention to the physical training of youth, will be represented on the National Board.

"The work of these organizations will be simplified, as a suitable staff of instructors will be collected together, who will be qualified to give really useful instruction. All types of physical training, games and gymnastics can, of course, be continued in the existing organizations.

"The type of training, however, which will be developed for the most part under the auspices of the National Board is given the name of *Geländesport*, that is to say, a type of physical activity which takes the young man out of the gymnasiums and the sports grounds into the country where he will take part in 'wanderings,' drill exercises and games in the open country. (*Note.—Geländespiel* is untranslatable, but would apply to Boy Scout training). These exercises will steel his body and develop strength of will, endurance, self-control, a spirit of comradeship and a readiness to sacrifice himself for others. His love for his country and for its very soil will be strengthened thereby.

"The National Board, at whose head is the Minister of the Interior, will carry out its intentions and plans in close touch with the State Governments. Representatives of the latter will be co-opted as members of the Board by the Minister of the Interior."

Details of the Scheme.—Detailed information as to the scope of the scheme has not yet been published officially. The following notes are taken from Press extracts published in Germany and certain semi-official announcements made by the Ministry of the Interior.

It is proposed to form about 20 to 25 training camps in various centres, at which up to 250 youths are to receive three weeks' training at a time. There are likely to be three tests yearly, in May, August and October, though it is not clear why there should not be a test on the completion of each course. The instruction to be given at these courses is to include all the various forms of athletic training (particular stress being laid on team work as opposed to individual prowess), cross-country running, map reading and compass marching.

The youths who attend the camps are to wear a common uniform, which is to be loaned to them for the period of the training, during which time all party uniform and badges are to be entirely banned. Rations are to be supplied free and reduced fares are to be granted.

It is proposed to draw some of the instructors from amongst those who have made their mark as trainers in various games, but for the most part they will be retired army or police officers. Two camps were formed in July this year for the purpose of training the first contingents of these instructors in the methods they are to adopt. Two successful courses have already been held at these camps, and the total attendance is reported to be about 800.

A sum of 1½ million marks has been made available to cover expenditure up to 1st April, 1933, but as it is intended to form these camps on vacant Government training grounds and the majority of the instructional personnel is in receipt of retired pay, the greater proportion of this grant should be available for expenditure on maintaining the youths in camp.

ITALY

MECHANIZATION.—The Italian General Staff have been experimenting for some time past with a light mechanical vehicle suitable for unit first line transport. A type has now been evolved and some 60 vehicles, known in Italy as *Autocaretta*, made their first appearance at manœuvres this summer; it is understood that they proved a great success.

These vehicles have been specially designed to carry a useful load of approximately 1 ton over narrow mountain roads and mule tracks. The track is, therefore, very narrow, being only just over 3 feet, whilst the overall width is 4 feet. The power plant is a 4-cylinder 20 h.p. air-cooled petrol motor; it is mounted forward of the front axle and is very accessible. The steering and driving mechanism work on all four wheels, each of which is capable of considerable independent movement in a vertical plane. The vehicle has a turning circle of 23 feet radius. The tyres are solid and can be fitted with steel tracks which have proved very effective. Experiments with pneumatic tyres are being carried out. The maximum speed on the flat is about 15 miles per hour and the average petrol consumption is about 7 miles per gallon. The machine can climb a slope of 1 in 2½ fully loaded.

The Italian General Staff hope that the *autocaretta* will be able not only to replace the limbered wagon but to travel in places inaccessible to that vehicle, and that it will also replace pack transport whenever some sort of a track is available even if only 4 feet in width.

"AVANGUARDISTI" CAMPS.—To celebrate the tenth year of Fascism, the usual camps for boys belonging to the *Avanguardisti* organization, which caters for those between the ages of 14 and 18 years, have this year been held on a somewhat more ambitious scale than usual.

The first camp, which was for *Avanguardisti* from abroad, opened on 28th August in the Campo Mussolini, immediately outside Rome. The day's activities started with breakfast at 7 a.m., after which gymnastics and games occupied the greater part of the morning. Following the midday meal the camp rested until 3.30 p.m., after which the boys were employed in various ways, including choral singing, until 5 p.m. From 6 p.m. they were allowed full liberty until 10 p.m. to visit the city and amuse themselves in any way they pleased. As far as could be seen this privilege was never abused, which is in itself a tribute to the boys, who were to be seen all over Rome every evening.

Meanwhile, on 1st September, the much larger camp of the home *Avanguardisti* had been opened in four sections, with an attendance of 50,000. Its programme was wider in scope than that of the *Avanguardisti* from abroad, and consisted not only of physical training but of military instruction and, in the evening, educational films. On 9th September a mass gymnastic display was given and, on the following day, the boys filed past Mussolini in one of the main streets of Rome. The camp broke up on 12th September.

MOROCCO

Operations and Pacification of French Zone.[1]—Last year's campaign closed in the Great Atlas in mid-September; operations are not likely to recommence until the end of next March. Good weather in September facilitated the making of the tracks necessary to stock the advanced posts, which are at a height of from 6,500 to 9,000 feet, with a seven-months' supply of ammunition and provisions.

The year's operations have halved the dissident area, and all Morocco which Marshal Lyautey described as being "useful" has now been occupied. The only two areas, whose pacification still remains to be accomplished, are:—

(*a*) The extreme south, beyond the Jebel Sarro and the Anti-Atlas, on the borders of the desert.

(*b*) The summits of the Great Atlas.

In the former area, an unopposed advance was made, early this year, to the line Tizert, Agadir Tisint. The Akka oasis (Wadi Akka), a very picturesque district which is expected to attract tourist traffic, was occupied on 25th April.

The remaining area in the Great Atlas is about ninety-five miles from north-east to south-west, that is to say parallel to the mountain ranges, and about fifty-five miles across. It forms the watershed between the Atlantic and the Sahara and consists of a tangled plateau, whose average height is about 7,000 feet and which rises at its north-eastern end to Jebel Ayachi, 13,000 feet. Here live about 20,000 families, who eke out a precarious livelihood in stock-rearing and cultivation of the *Wadi* bottoms, supplemented by the spoils of raiding. The chiefs, who are elected annually, have considerable difficulty in maintaining sufficient order for the transactions in their few markets. *Marabouts*, or holy men, use their influence to encourage a fierce hatred of an invader.

The operations of early 1932 effectually separated the two dissident areas. Advancing from the Tafilalet oasis, which had been occupied by the end of January, the Morocco-Algerian Border Force effected a junction at Todgha with

[1] To follow this account the reader is recommended to consult *The Times'* Atlas, plate 77.

the troops advancing from Marrakech, so re-opening the Marrakech—Bou Denib route and completing the encirclement of the Great Atlas. With the coming of spring, an offensive was opened on the northern front, the object of which was to bring pressure on the Aït Haddidou, the powerful tribe who occupy the central mountains, combined with operations against the neighbouring tribes.

The method employed was one of penetration and encirclement, in order to minimise loss of life and damage to property except when retaliation was called for. The objectives were such vital points as exist in each district.

On 10th April, the Meknes column, passing between the Jebel Masker and Jebel Ayachi, made contact with a detachment of the Border Force advancing from Rich. The Jebel Ayachi, whose southern valleys are most fertile, was thus detached from the main dissident area without a shot being fired.

Advancing from Mzizel in mid-April, columns of the Border Force occupied the Semgat country, and by 22nd July, had penetrated to Od Tarbat in the Haddidou country.

On 13th July, the Tadla column moved southwards in three bounds through the Shokmane country, in co-operation with the Meknes column from the north-east and a column from the west. By 14th August the Plateau des Lacs, for long the base of sheep-lifting raids as far as Midelt and Tadla, had been occupied. An unexpected windfall was now in store for the French. Towards the end of July a number of tents had been sighted west of the Jebel Tazizaout, some miles north of the Plateau des Lacs, and it suddenly came to light that this concentration consisted of some 3,000 tents, whose occupants included the unsubdued elements from all the Middle Atlas tribes, who expected no pardon.

Emissaries sent to parley returned with their hands cut off. The blockade was tightened, and General de Loustral was put in command of both Tadla and Meknes columns. The key to the situation was the Tazizaout, a rocky mountain whose lower slopes were clothed in trees and shrub, which afforded excellent cover from ground and air observation. On 4th September a battalion of the Legion was sent by night to the foot of the only track which ascended the mountain. The machine guns had to be carried by hand. By the fourth day they had reached the pass and moved along the crest line to the position assigned to them. Here for four days they were almost continuously attacked, while desperate charges were also launched upon the main columns. On 10th September Sidi el Mekki, accompanied by several Sheikhs, entered the French lines and offered to surrender 1,500 tents, 2,000 fighting men and 4,000 rifles. The subsequent submissions in the Plateau des Lacs district to 20th October totalled some 23,000. The physical condition of those who surrendered was deplorable.

French casualties in the operations were slight and fell mostly on the irregular native troops. Use was made of night advances to reduce casualties, and much information was obtained from the air. Although the remaining insurgents include unsubdued elements from the whole of Morocco, it is expected that the next campaigning season will see resistance at an end. During the winter the blockade will be continued.

In the extreme south of Morocco, on the Algerian border, advantage was taken of good weather in October and November to occupy a further area. Advancing southwards down the Dra Valley from Zagoura, 30 miles south-east of Rebat, the Marrakech Mobile Column effected a junction with a column of the Border Force, which consisted of a camel company and mechanised elements, near the bend of the Dra. The latter had marched 125 miles westwards from the

Oasis of Tabelbala. The operation was completely successful and resulted in the surrender of the local dissidents. No fighting seems to have taken place.

UNITED STATES

ARMY REORGANIZATION.—(1) *General Scheme.* An important reorganization of the peace-time military establishment of the United States is announced.

Previously the continental United States was divided into three Army Areas, each subdivided into three Corps Areas, but the Army Areas existed only on paper and no commanders or staffs were designated for them though legislative authority existed for their appointment should the necessity arise.

The new organization provides for General Headquarters and four Field Armies.

The Chief of Staff of the United States Army is appointed Commanding-General, General Headquarters, and his staff will be composed of the War Plans Division of the War Department, General Staff, and other personnel as required. In addition to his other duties, therefore, he is placed in command of the Field Army Group composed of four Field Armies.

The four Field Armies are composed of divisions of the Regular Army, National Guard and Organized Reserves organized into corps. Each Field Army contains two or more of the present Corps Areas.

The Senior Corps Area Commander in each Field Army is appointed Commander of the Field Army, and his staff consists of his Corps Area Chief of Staff and other personnel as required.

The First Field Army, with headquarters in New York, will deal with the North Atlantic and the North-Eastern frontier.

The Second Field Army, with headquarters in Chicago, will deal with the strategic area of the Great Lakes and the central Northern frontier.

The Third Field Army, with headquarters at San Antonio, will deal with the region of the Gulf of Mexico and the southern frontier.

The Fourth Field Army will have its headquarters at first in Omaha, the headquarters of the present Senior Corps Commander, but it is intended that its headquarters will be moved later to San Francisco. This Army will deal with the Pacific Coast.

(2) *Objects.*—The following are given as the objects of the reorganization :—

(*a*) To provide appropriate agencies to complete the development of war plans prepared by the War Department, General Staff.

(*b*) To provide commanders for high units, and their staffs, prepared to take the field and execute the plans prepared by them.

(*c*) To provide agencies for the conduct of command post and other suitable peace-time training exercises.

(*d*) To provide, as a preliminary step to any general mobilization, an adequate force, within the minimum of time with the maximum of training, sufficient to protect any general mobilization that may be necessary.

(*e*) To provide a force sufficient to handle all emergencies short of a general mobilization.

AIR NOTES

ROYAL AIR FORCE

Promotions.

The following promotions were made, with effect from 1st January, 1933 :— Air Chief Marshal Sir John Maitland Salmond, G.C.B., C.M.G., C.V.O., D.S.O., to be Marshal of the Royal Air Force ; Air Marshals Sir Edward Leonard Ellington, K.C.B., C.M.G., C.B.E., A.D.C., and Sir William Geoffrey Hanson Salmond, K.C.B., K.C.M.G., D.S.O., to be Air Chief Marshals ; Air Vice-Marshal Hugh Caswall Tremenheere Dowding, C.B., C.M.G., to be Air Marshal ; Air Commodore Philip Bennet Joubert de la Ferté, C.M.G., D.S.O., to be Air Vice-Marshal ; Group Captains Alexander Duncan Cunningham, C.B.E., Geoffrey Rhodes Bromet, D.S.O., O.B.E., Francis Knox Haskins, D.S.C., A.D.C., John Eustace Arthur Baldwin, D.S.O., O.B.E., A.D.C., to be Air Commodores.

Appointments.

Air Commodores.—Patrick Henry Lyon Playfair, C.B., M.C., to No. 23 Group Headquarters, in command—31st October, 1932 ; Charles Dempster Breese, A.F.C., to Headquarters, Fighting Area, as Senior Air Staff Officer—20th November, 1932.

Group Captains.—Bertine Entwisle Sutton, D.S.O., O.B.E., M.C., to No. 1 (Indian) Group Headquarters, in command—28th September, 1932 ; Lawrence Auker, O.B.E., to No. 1 Stores Depot, in command—1st November, 1932.

Wing Commander (Acting Group Captain).—Edward Lancelot Tomkinson, D.S.O., A.F.C., to Special Duty as Air Adviser to the Greek Government—1st December, 1932.

Material.

Technical Development.—Limited information is now available on the following new types :—

The Vickers Bomber has a gross weight of 16,252 lb., and is fitted with two Pegasus engines.

The Handley Page Bomber is of unconventional design in that the fuselage is carried immediately below the top planes. The cockpit is considerably higher than any previous Service type. The overall height of the aeroplane is 17 ft. 6 in., the length is 58 ft., and the wing span 75 ft. It is fitted with two Kestrel engines and has a gross weight of 15,534 lb.

The Singapore II is a development of the previous Singapore and is fitted with four Kestrel engines. Accommodation is provided for a crew of five. The gross weight is 27,809 lb.

The Iris V is a development of the Iris III and has three Buzzard engines fitted instead of Condor engines. The gross weight is 31,046 lb. The wing span is 97 ft. and the length 67 ft. 3 in.

The Southampton is similar in general design and construction to the standard Southampton with the exception of the installation of two Kestrel engines and of arrangements for steam cooling. The total weight is 14,841 lb.

The Short Open Sea Reconnaissance Flying Boat has a gross weight of approximately 33 tons. A crew of ten is carried. It is fitted with six Buzzard engines.

RE-EQUIPMENT.—In addition to the re-equipments mentioned in these Notes last quarter, the following changes have recently taken place. No. 460 Flight—Fairey III. F. F.A.A. from Ripon; No. 404 Flight—Hawker Nimrod and Osprey from Flycatcher; No. 405 Flight—Hawker Osprey (half Flight only) from Flycatcher.

No. 47 (B) Squadron is being re-equipped with Fairey Gordon from Fairey III. F. G.P.

The following units will be re-equipped during the next few months:—R.A.F. College, Cranwell—Avro Tutor from Avro 504N; No. 501 (B) Squadron—Westland Wallace from Wapiti; No. 601 (B) Squadron—Hawker Hart S.E.B. (D) from Wapiti; No. 600 (B) Squadron—Hawker Hart S.E.B. (D) from Wapiti; No. 442 Flight—Fairey Seal from Fairey III F. F.A.A.; No. 449 Flight—Fairey Seal from Fairey III F. F.A.A.; R.A.F. Base, Calshot—Saro Cloud from Southampton.

AERONAUTICAL RESEARCH COMMITEE.—The Marquess of Londonderry, Secretary of State for Air, has appointed Mr. H. T. Tizard, C.B., A.F.C., F.R.S., to be Chairman of the Aeronautical Research Committee in succession to Sir R. T. Glazebrook, K.C.B., F.R.S., with effect from 1st April, 1933.

GENERAL.

DESIGNATION OF SQUADRONS AND FLIGHTS.—Air Ministry Order No. A. 336 dated 1st December, 1932, states that from an operational and administrative point of view it is considered desirable that the functional character of the unit should, where possible, be embodied in its title for convenience of identification. Examples are given in this Order of the full and abbreviated titles which are accordingly to be used respectively in official correspondence and in orders in the field.

USE OF PRIVATE AIRCRAFT BY R.A.F. OFFICERS IN EGYPT AND THE SUDAN.—An Air Ministry Order (No. A. 307, dated 17th November, 1932) announces that R.A.F. officers are now permitted to keep private aircraft in Egypt and the Sudan. Officers desiring these facilities are to apply to the A.O.C., Middle East, through the usual Service Channels in order that the necessary arrangements may be made with the Sudan Government for the issue of the necessary import licence.

OFFICERS' CANES.—An Air Ministry Order (No. A. 356, dated 21st December, 1932) states that in future officers in uniform are not to carry canes.

AIRMEN'S CANES.—Air Ministry Order (No. A. 357, dated 22nd December, 1932), states that regulation canes are not to be carried by airmen when on duty, but they may be carried off duty at the option of the airmen.

AWARD OF POLAR MEDAL.—Flight Lieutenants Narbrough Hughes D'Aeth and Henry Iliffe Cozens, R.A.F., are included in the list of members of the British Arctic Air Route Expedition, 1930-31, to whom, as announced in the *London Gazette*, dated 4th November, 1932, His Majesty the King has approved the award of the Polar Medal, in silver, with clasp inscribed "Arctic, 1930-1931."

THE STATUS OF WARRANT OFFICERS.—A recent Air Ministry Order describes the new status and responsibilities of Warrant Officers in the R.A.F. The changes will be brought into operation as far as possible forthwith. The main points are as follows :—

Title.—The rank of Sergeant-Major is abolished and that of Warrant Officer substituted in lieu. They will be referred to as "Mr." and will on all occasions be addressed by airmen as "Sir," as is customary at present.

Disciplinary.—The trial of Warrant Officers by district court-martial will cease, and in future they will be liable to trial only by general court-martial or field general court-martial, or summarily under section 47 of the Air Force Act.

Responsibilities.—Technical Warrant Officers will be responsible to C.Os. that their duties are carried out in accordance with regulations. When acting as orderly officer they will carry out full duties of that post in connection with : (*a*) Daily inspection of detention rooms ; (*b*) Daily mustering and examination of secret and confidential publications issued to, and retained by, signal and W/T offices ; (*c*) Receipt, etc., of registered mail. They will be shown such secret publications as their duties require.

Dress.—The design of the greatcoat is being revised ; it will be made longer, and have belt and shoulder straps. Detailed instructions as to this will be promulgated in due course.

Miscellaneous.—The names of Warrant Officers will be shown by units in the Air Force List. They will be eligible to serve as members of Fire Committees. In future building schemes, Warrant Officers' quarters will be separated from those of airmen wherever possible.

In future an annual confidential report will be required in respect of every Warrant Officer.

DETAILS OF MAGNETIC VARIATION AT R.A.F. STATIONS.—A table of the magnetic variation at R.A.F. Stations in Great Britain and Northern Ireland is given in Air Ministry Order No. A. 288, dated 20th October, 1932, for use forthwith in the re-marking of compass-swinging bases in use by the R.A.F. Revised tables will be published at intervals of five years.

ROYAL AIR FORCE DISPLAY, 1933.

The Fourteenth Royal Air Force Display will be held at the Royal Air Force Station, Hendon, on Saturday, 24th June.

HOME COMMANDS

R.A.F. STATION, MANSTON.—The administration of the R.A.F. Station, Manston, was transferred from Headquarters, No. 23 Group. to Headquarters, No. 22 Group, with effect from 1st October, 1932.

MOVE OF SCHOOL OF STORE ACCOUNTING AND STOREKEEPING.—The School of Store Accounting and Storekeeping moved from Kidbrooke to Cranwell, with effect from 1st December, 1932.

R.A.F. STATION, ABBOTS INCH.—Abbots Inch opened as a R.A.F. Station on 23rd January, 1933, and No. 602 (City of Glasgow) (Bomber) Squadron moved from Renfrew to Abbots Inch as from that date.

THE SASSOON PHOTOGRAPHIC CHALLENGE TROPHY.—An Air Ministry Order (A. 361/1932) states that a photographic trophy to be known as "The Sassoon

Photographic Challenge Trophy" has been presented by the Right Honourable Sir Philip A. G. D. Sassoon, Bart, C.B.E., C.M.G., M.P., Under-Secretary of State for Air, for competition annually by regular units in the Home Commands normally carrying out air photography, except the School of Photography. The competition will consist of the production of a mosaic of an area of country within a thirty miles radius of the unit's aerodrome, to conform to certain conditions notified annually.

COURSE OF INSTRUCTION AT IMPERIAL DEFENCE COLLEGE.—The following officers have completed satisfactorily a course at the Imperial Defence College which terminated on 16th December, 1932 :—Group Captain, G. R. M. Reid D.S.O., M.C. ; and Wing Commanders F. G. D. Hards, D.S.C., D.F.C., M. Henderson, D.S.O., A. T. Williams, O.B.E., and H. K. Thorold, D.S.C., D.F.C., A.F.C.

COURSES OF INSTRUCTION AT ROYAL AIR FORCE STAFF COLLEGE.—An Air Ministry Order (No. N.579, dated 29th December, 1932) states that the following officers have satisfactorily completed the tenth course (1932) at the Royal Air Force Staff College :—

Royal Air Force.

Squadron Leaders D. V. Carnegie, A.F.C., W. Elliot, D.F.C., P. E. Maitland, A.F.C., H. V. Rowley, H. B. Russell, A.F.C., H. A. Whistler, D.S.O., D.F.C. ; Flight Lieutenants J. L. Airey, D.F.C., R. L. McK. Barbour, D.F.C., A.F.C., H. G. Brookman, H. S. Broughall, M.C., D.F.C., A. J. Cox, M.B.E. (Stores Branch), L. Darvall, M.C., W. F. Dry, E. C. Farman (Stores Branch), F. F. Garraway, J. A. Gray, D.F.C., E. F. Haylock, R. Ivelaw-Chapman, D.F.C., A.F.C., H. T. Lydford, A.F.C., A. J. Rankin, A.F.C., R. H. S. Spaight, S. E. Storrar.

Dominion Air Forces.

Flight Lieutenant T. A. Swinbourne, R.A.A.F., and Flight Lieutenant K. MacG. Guthrie, R.C.A.F.

Royal Navy.

Commanders C. S. Daniel, and J. M. Mansfield, D.S.C.

Army.

Majors E. G. Campbell, R.A., and J. G. Bruce, Indian Army.

ELEVENTH R.A.F. STAFF COLLEGE COURSE.—The Eleventh Course at the R.A.F. Staff College began on 23rd January. Two Squadron Leaders, twenty-one Flight Lieutenants, R.A.F., two Flight Lieutenants, R.A.A.F., and two Flight Lieutenants R.C.A.F. are undergoing the course.

PASSING OUT INSPECTIONS.—The Passing Out Inspection of Flight Cadets from the R.A.F. College, Cranwell, took place on 16th December, 1932, the inspection being carried out by Air Vice-Marshal R. H. Clark-Hall, C.M.G., D.S.O., Air Officer Commanding, Coastal Area. The Sword of Honour, presented to the best all-round Flight Cadet in the senior term, was awarded to Flight Cadet Under Officer Robert Vincent Rolph.

The Passing Out Inspection of Aircraft Apprentices from No. 1 School of Technical Training (Apprentices), Halton was carried out by Air Marshal Sir E. L. Ellington, K.C.B., C.M.G., C.B.E., A.D.C., Air Member of Council for Personnel, on 21st December.

The Passing Out Inspection of Aircraft Apprentices from the Electrical and Wireless School, Cranwell, was held on 22nd December, and was carried out by Air Vice-Marshal Sir T. I. Webb-Bowen, K.C.B., C.M.G., Air Officer Commanding Wessex Bombing Area.

CADETSHIPS.—The Air Council have awarded Prize Cadetships, each of the value of £105 per annum for two years, to successful candidates at the examination held in November, 1932, for entry into the Royal Air Force College, Cranwell, from the following schools :—Clifton College—two ; Wellington College, Downside School, Radley College, College Secondary School, Swindon—one each.

Two Aircraft Apprentices from No. 1 School of Technical Training (Apprentices), Halton, have been selected for Cadetships at the Royal Air Force College, Cranwell, on the result of the examinations held on completion of their three years training as aircraft apprentices.

ARMY CO-OPERATION

With two exceptions, no Army training has been carried out in which forces greater than a brigade have been employed. Co-operation during battalion and brigade training has been provided in all Army Commands, and many reconnaissances in connection with exercises with troops have been carried out.

In the Northern Command one exercise involving three infantry brigades and ancillary troops was held. No. 26 (A.C.) Squadron provided the necessary air co-operation. One exercise was carried out by 3rd Division, in which 16 (A.C.) Squadron co-operated.

With the following exceptions, the greater part of co-operation has been done from Home stations. No. 16 (A.C.) Squadron detached one flight to Okehampton in September to co-operate with the 8th Infantry Brigade in camp at Willsworthy. No. 2 (A.C.) Squadron on several occasions operated from Friday Wood landing ground, near Colchester, in connection with 4th Division training, and No. 13 (A.C.) Squadron co-operated with the 1st Division from Odiham.

During the quarter, students from the Staff College, Camberley, have been attached for a period of training to Army Co-operation Squadrons. This is an annual event from which much benefit is derived by both Services.

The Aldershot Command held a mountain warfare tactical exercise without troops at Criccieth in Wales, during the latter part of September. Several officers from Army Co-operation Squadrons attended it. The weather was good, and an enjoyable and most instructive three days work was carried out.

Army Commands held their annual Intelligence Courses during October and November, and squadrons assisted by placing aircraft at the disposal of Commands so that students could themselves carry out simple reconnaissances.

Demonstrations of the methods used in army co-operation work have been given to students from the School of Artillery, Larkhill, to personnel of the Royal Tank Corps, and to a few infantry regiments. Several low-flying attacks have taken place against army units, in order to practice the control from the ground of small arms and light automatic fire against aircraft.

KITE BALLOONS.—Some sixty hours have been spent in the air by kite balloons from the R.A.F. Balloon Centre in co-operating with artillery and on Service training. Artillery observation has been carried out and a number of officers have been taken up for air experience, while a considerable amount of cross-country

work in handling balloons under varying conditions has been undertaken by the crews.

FLEET AIR ARM

Owing to the increased provision of aircraft for H.M. ships, other than carriers, a re-organization of certain flights has become necessary. Details of these changes will be found in Navy Notes, p. 184.

Flying Boats.

Accident in Plymouth Sound.—A collision between an Iris flying boat of No. 209 (F.B.) Squadron and a naval dockyard launch occurred in Plymouth Sound on the 12th January, involving the death of a leading aircraftsman. At the subsequent inquest the coxwain of the launch stated that the port propeller appeared to be "idling," and other evidence seemed to indicate that there was an uncontrolled swing of the flying boat to port at the moment of landing. The jury exonerated everyone from blame.

Mediterranean.—On the 21st January, three British flying boats landed at Syracuse from Malta, to obtain the services of two Italian specialist surgeons, Professor Bilancione and Dr. Silvani, for an immediate operation on Rear-Admiral F. L. Tottenham, commanding the 3rd Cruiser Squadron.

OVERSEAS COMMANDS

Tour of Inspection by the Secretary of State for Air.

Lord Londonderry, Secretary of State for Air, left London by air on 11th January to carry out a tour of inspection of Royal Air Force Stations in the Middle East and Iraq. He was accompanied by Mr. L. G. S. Reynolds, O.B.E., his Principal Private Secretary. He returned to England on 1st February.

Inter-Command Flights.

No. 2 (Indian) Wing.—A formation flight of five Hart aircraft from No. 2 (Indian) Wing, under the leadership of Flight Lieutenant F. H. Isaac, D.F.C., left Risalpur on 17th October, 1932, for Gilgit, where they arrived the same morning. Three nights were spent at this station, and the Flight returned to Risalpur on 20th October.

After leaving Risalpur the Flight headed for Shang, which was passed at a height of 10,000 feet. The aircraft then flew up the Indus Valley, attaining as direct a course as the height of the mountains would permit, to Jalkot and Bandazasin. Owing to increasing clouds above 10,000 feet, it was decided to keep just below this height, in order to see the weather ahead. On turning eastward along the Indus Valley from Bandazasin towards Chilas, the valley widens and no further trouble was feared with regard to weather conditions. The aircraft flew over Chilas at a height of 10,000 feet and landed at Gilgit, having taken about 2 hours 20 mins. to do a distance of nearly 300 miles.

On landing the Flight was met by Major Gillan, the Political Agent at Gilgit, and by the Mir of Nagir and his followers. The local populace, to the number of six or seven hundred, were also present and showed great enthusiasm. A guard was provided by the 3rd Brigade, Kashmir State Forces.

While the aircraft were at Gilgit, flights were undertaken to Hunza and Nagir and over the Punial District. Two of the aircraft took part in a flight to Hunza and Nagir.

On the return trip Sher Kila and the Ishkuman Nullah area of the Punial District were visited, the Gilgit River being followed at a height of 12,000 feet.

Owing to the warmth obtained from the radiator, both in the pilots' and air-gunners' cockpits of the Hart aircraft, it was unnecessary to wear any additional flying clothing during the flight. No difficulties of any kind were experienced during the flight.

No. 28 (Army Co-operation) Squadron.—Four Westland "Wapiti" aircraft of No. 28 (Army Co-operation) Squadron left their home station, Ambala, on 2nd January on an inter-command training flight to Singapore and return. Flying via Allahabad, Dacca, Akyab, Rangoon, Tavoy and Alor Star, Singapore was reached on 11th January after being held up for two days at Taiping, between Alor Star and Singapore by bad weather.

The return flight was commenced on 15th January, Calcutta and Allahabad being included in the itinerary in place of Dacca and Akyab. Slight delay was encountered at Alor Star owing to engine trouble but Allahabad was reached on 20th January and the flight completed at Ambala the following day.

No. 36 (Torpedo Bomber) Squadron.—Four Hawker "Horsley" aircraft of No. 36 (Torpedo Bomber) Squadron left Seletar on 22nd January, 1933, on a 7,000 miles inter-Command cruise to Peshawar and return.

The outward flight will be made via Alor Star, Tavoy, Rangoon, Akyab, Calcutta, Allahabad, Delhi and Lahore, Peshawar being reached on 3rd February. The programme allows for a day being spent at Rangoon, Calcutta and Delhi on 26th January, 29th January and 1st February respectively. The return flight will start on 10th February and will be made via Ambala, Agra, Allahabad (where aircraft will remain on 13th February), Calcutta, Akyab (remain 16th February), Moulmein, Mergui and Taiping, Seletar being reached again on 20th February.

One of the aircraft was damaged in a forced landing at Port Swettenham on 23rd January. The occupants, however, were unhurt and a reserve machine was sent to Alor Star from where the flight continued according to programme.

AVIATION IN FOREIGN COUNTRIES

BELGIUM

Orders have been placed for a further number of Fox day bombers and Firefly single-seater fighters. These aircraft are constructed partly in England and partly in Belgium. Both types are fitted with Kestrel engines.

CHINA

Thirteen students returned to China at the end of last year, having spent the previous twelve months studying various branches of aviation in America.

The first six of the twenty Fiat B.R.3 bomber biplanes with 1,000 h.p. Fiat engines, ordered by the government, have arrived at Shanghai, where they were to be trans-shipped to Hangchow for erection and test. The Chinese personnel will be trained by an Italian instructor.

FRANCE

Control of the Naval Air Service.—A new decree was published on 30th November, 1932, defining the spheres of responsibility of the Minister for

Marine and the Air Minister with regard to the Naval Air Service. Under this the Naval Air Service is divided into three branches—the Naval Air Service afloat, the Naval Air Service Co-operation Units not afloat, and the Independent Naval Air Service. The first is completely under the control of the Minister for Marine. The second is under the Minister for Marine for all operations, etc., but the Air Minister has certain responsibilities with regard to training. The third is completely under the control of the Air Minister, but the Minister for Marine is to assist him temporarily by a loan of personnel, etc., until the branch is properly formed. The Independent Naval Air Service will consist of three torpedo-bomber squadrons and three fighter squadrons, but it is not yet known which squadrons are to be allocated thereto.

Naval Air Service Afloat. The Naval Air Service Afloat includes three squadrons carried in the aircraft carrier "Béarn" and twenty seaplanes carried in the "Commandant Teste," besides the machines belonging to the latest cruisers, each of which is equipped with two catapults.

Air Manœuvres.—The air manœuvres and exercises held in France during 1932 can be classified under three main headings :—

(i) Exercises designed to test the efficiency of the passive defence organization.
(ii) Exercises designed to test the Air Force in attack and defence.
(iii) Combined exercises with the Army or Navy, in which the Air Force co-operates as a subsidiary arm.

Passive defence exercises have been held all over France under the direction of Marshal Pétain. They have ranged from small local inspections, in which only the permanent staff took part, to extensive operations covering large and important areas and involving the whole civil population. In all instances the results appear to have been satisfactory. The organizations built up by the civil administration for warning the people of impending air raids, control of lighting, suppression of fires and rendering first aid to casualties seem to have been effective. The most interesting feature of the exercises was the whole-hearted way in which the civil population co-operated. Important towns were plunged into darkness for several hours at a time on three or four successive nights, but there were very few complaints. In the North in particular everybody appears to have taken a genuine interest in the conduct of the operations and done his best to ensure their success. Aircraft were rarely employed in these exercises, and if they did take part they were only used to observe the effect of the lighting restrictions, etc.

Manœuvres of the second class were held in the areas of Dijon, Metz and Marseilles. Although the primary object of these exercises was to test the Air Force, the opportunity was used to give a further test to the passive defence organization under more realistic conditions. From press accounts it appears that on the whole the bomber formations were usually able to penetrate the defence organization with little difficulty. Practically no mention is made regarding the tactics adopted by either the bomber or fighter formations, except at Dijon, where low bombing and mass attacks appear to have been the order of the day. There was a noticeable increase in night flying.

The most extensive of the exercises which fell under the third heading was the series of army manœuvres held in the Champagne district. Unfavourable weather conditions greatly hampered air activity, but when it was found possible to use aircraft they appear to have been confined to the battle area. But, if the meagre press reports are to be trusted, the air forces do not appear to have played a very important role in these manœuvres.

One other exercise which deserves mention was a combined operation carried out in the neighbourhood of Brest. During the course of this exercise a small force landed near Plouguerneau and managed to advance a few miles inland before it was driven back to the sea by a superior force. The co-operating aircraft were again delayed by bad weather. The object of the exercise was to test the coast defence signal service.

GERMANY

AIR ESTIMATES, 1932–1933.—A sum of 43,843,200 reichmarks has been budgeted for German Civil Aviation by the Ministry of Transport for the financial year 1932–33. For the previous year the figure was 43,100,900 reichmarks, of which 41,848,550 reichmarks were expended. The following are some of the more interesting items :—Technical advancement of aviation, 5,130,000 R.M. ; development of the aircraft industry, 11,000,000 R.M. ; development of public air traffic, 17,362,000 R.M. ; training of professional civil pilots, 2,000,000 R.M. ; development of airship traffic, 700,000 R.M. ; amortization of loan to the Deutsche Luft Hansa (final instalment), 2,000,000 R.M.

The above figures do not include any contributions in cash and kind which may be forthcoming from the constituent German States, the Provinces and Municipalities, in aid of civil aviation.

LIGHT AEROPLANES.—Great progress has been made recently in the development of the light aeroplane. The International Touring Competition and other competitions have proved beneficial for the development in Germany of this class.

Of outstanding interest is the Heinkel H.E.64—the first light aeroplane constructed by the Heinkel firm.

The H.E.64 is a two-seater cantilever low wing landplane constructed of wood. Three different variations were constructed for the International Touring Competition, differing from one another chiefly in the wing area. The first type to be constructed is known as the H.E.64A, and has a wing area of 16.44 sq. m. and, unlike the other two machines, has no slotted wings. The second type, the H.E.64B, has a wing area of only 13 sq. m., and is equipped with slotted wings and flaps. The third type, the H.E.64C, also has slotted wings and flaps, its wing area being 14.4 sq. m.

The wing units of the H.E.64B and the H.E.64C are constructed on the monospar system, and, with the exception of the fittings, are built entirely of wood. The fuselage of these machines is also of wood with fabric covering.

An innovation is the use of the slotted wing together with flaps on the trailing edge. By these means a maximum speed of 245 km/hr. and a minimum speed of 73 km/hr. is attained, which gives a speed ratio of 3.36 : 1.

ITALY

FIAT RACING ENGINE.—Since the Schneider Trophy competition some particulars of the Fiat racing engine, which was fitted in the Macchi seaplanes intended for that contest, have been made known. The engine is virtually two twelve-cylinder " V " engine units placed back to back driving through gearing two airscrew shafts, one revolving within the other. Two adjustable pitch airscrews are used, one in front of the other. The engine develops 2,800 h.p. at 3,200 max. r.p.m.

NEW FIGHTER.—A new single-seater fighter aeroplane, the C.R.30, fitted with the Fiat type A.30 engine developing 600 h.p., has recently been produced. This aircraft appears to be still in the experimental stage. It is possible that the C.R.30 will replace the C.R.20 as a standard service aeroplane.

ITALIAN D.O.X.—Some particulars of the Italian type D.O.X., fitted with twelve Fiat A.22R 630 h.p. engines are of interest:—the maximum load is 108,640 lb.; weight empty 73,920 lb.; weight of fuel carried, 33,600 lb.; speed over measured base, 208 km. per hr. (130 m.p.h.); ceiling, 6,500 ft.

JAPAN

NEW FIGHTERS.—The following data of the two new Nakajima and Kawasaki single-seater fighters have appeared in the Japanese press.

The Nakajima, type 91, of monoplane design, is fitted with a Japanese-built Jupiter 500 h.p. engine. The aeroplane has a top speed of 186.3 m.p.h., and can climb to 16,400 ft. in 10 minutes. The gross weight is approximately 3,360 lb. The cruising range is 2½ hours. The span is 36 ft., length 24 ft., and height 10 ft.

The Kawaski, type 92, is a biplane with a maximum span of 24.7 ft. The gross weight is about 3,525 lb. The engine fitted is the B.M.W. 600 h.p. The speed of this aeroplane has been variously reported to be between 320 km. (207.9 m.p.h. and 350 km.p.h. (226 m.p.h.). It is stated to have climbed in the test flight to 5,000 metres (16,500 ft.) within 8 minutes. A further press statement gives the climb to 5,000 metres in 6 min. 50 sec.

NEW FLYING BOATS.—According to a press report, the third K.F.1 flying boat, with three Rolls-Royce Buzzard engines, is now complete, and has carried out very successful trials. This type of aircraft, which weighs 20 tons fully loaded, has been adopted by the Japanese navy, and has been given the official designation 20/2.

NETHERLANDS

The Dutch Government has placed an order for a considerable number of Rolls-Royce Kestrel aero engines of the type used by the fastest British fighters and day bombers. The engines are being manufactured at the Derby Works.

PERU

In view of the hostile atmosphere between Peru and Columbia, the naval and military aircraft of the former have been concentrated at Iquitos, Letecia and Putomayo. A patriotic fund for the Defence of Peru, the object of which is chiefly to supply additional aeroplanes, has been started and a large sum has already been collected.

SOVIET UNION

FIVE YEAR PROGRAMME.—Under the Five Year Programme, 913 aircraft, 16 airships and 16 balloons were due to be constructed during 1932. The full programme, which should be completed during the year 1935, provides for 5,000 aircraft divided up into 62 aerial regiments.

The exact number of military aircraft in the Soviet Air Force is not known, owing to the fact that reports are very conflicting, but according to the Swedish

paper *Dagens Nyheter* the U.S.S.R. possessed at the beginning of 1932 some 2,000 aircraft, of which 800 were for reconnaissance duties, 400 for bombardment duties, 400 for fighter duties and 400 seaplanes.

LARGE ALL-METAL AEROPLANE.—The Central Aero-Hydrodynamic Institute, Moscow, have produced an all-metal aeroplane, the "A.N.T.14." On a flight to Kharkoff last autumn, 35 passengers were carried, in addition to a crew of 6. It is claimed that the "A.N.T.14" is the fourth largest aeroplane in the world, and that its performance is better than that of the Junker G.38. The following details have appeared in the Press:—wing span, 40.4 metres; length, 26.5 metres; total loaded weight, 17 tons; useful load, 7 tons; maximum speed, 220 km/hr.; cruising speed, 180 km/hr.: the power unit consists of five air-cooled engines developing 2,400 h.p.

NEW FLYING BOATS.—A number of Savoia flying boats, type S.55, have been ordered from Italy, fitted with two Asso 750 h.p. engines. The standard Italian equipment for these flying boats is two Asso 500 h.p. engines.

AIR FORCE DESERTIONS.—A report in the French press gives an account of an attempt at desertion from Soviet territory in a Russian military aeroplane, which was shot down near the Polish frontier by an aeroplane sent in pursuit, the two occupants being killed. This is stated to be the second attempt of the kind by Soviet air force personnel.

UNITED STATES

ARMY AIR CORPS.—The Estimates for the Army Air Corps make provision for 375 new aeroplanes, which means that this Corps should have a total of 1,357 machines in service, or on order, by 30th January, 1934, out of an approved full programme of 1,648 army aeroplanes.

NAVAL AIR SERVICE.—The Annual Report of the Naval Air Service states that there has been a saving of 3,541,103 dollars in naval aviation for 1932. This was made possible by reductions in the operating force, abnormally low price of fuel, and reduction of spares.

All battleships have been supplied with three aeroplanes; 8-inch cruisers with four; 6-inch gun cruisers with two; the "Lexington" and "Saratoga" with seventy-two each; and the "Langley" with twenty-nine. There is now a total of 918 service aeroplanes for the Navy and Marine Corps, and 162 for naval reserves. There are 1,158 pilots including 803 officers and 355 enlisted men.

AIRCRAFT TYPES.—Monoplane types of aircraft have been steadily gaining favour in the Services. These include the Curtiss A.8 Attack aeroplane, the Boeing B.9 Bomber, the Douglas Bomber X.B.7–2, and the Martin Bomber X.B. 907.

The Curtiss A.8 is a low-wing monoplane with Curtiss 600 h.p. "Conqueror" engine with Prestone cooling.

The Boeing B.9, fitted with two "Hornet" engines, is modelled after a fast civil transport of the type fitted with two "Wasp" engines. It is stated to have a top speed exceeding 190 m.p.h. at 10,000 ft. The gross weight is 13,890 lb. The bomb load is 2,200 lb. and petrol carried is 270 gallons (U.S.A.).

The Douglas X.B.7–2 is fitted with two 600 h.p. "Conqueror" engines. It is reported that the top speed is 177 m.p.h. and that it can climb to 10,000 ft. in 8 mins. 30 secs. The weight empty is 7,284 lb., and fully loaded weight 10,177 lb.

The Martin Bomber X.B.907 is fitted with two " Cyclone " 575 h.p. engines. The aircraft is specially designed as an Army light bomber, and is fitted with retractable undercarriage.

Two Martin Bomber reconnaissance flying boats have been developed from the Type 120 (P.M.1). Type 121 is a monoplane fitted with three " Cyclone " engines. Type 122 is a biplane version fitted with two " Cyclone " engines. The latter type is reported to have a maximum speed of 121.8 m.p.h. The weight empty is 9,090 lb., and fully loaded 16,801 lb. Range as bomber 930 miles. Range for patrol 1,400 miles.

Emergency Flotation Gear for Naval Aircraft.—Heavier-than-air aircraft of the U.S. Naval Air Service employed in operational units at sea are equipped with an emergency flotation gear for use in case of forced descent into the sea. The gear consists of large rubber bags stowed in a deflated condition inside the wings and fuselage. The bags can be inflated from a tube of carbon dioxide gas under pressure. The resultant buoyancy is sufficient to keep the aircraft afloat for some hours. A rubber raft, which can be quickly inflated with air, is also carried.

The efficiency of this apparatus was fully demonstrated on October 10th–11th, 1932, when four Marine Corps two-seater landplanes, having lost contact with the carrier " Lexington," force-landed at various distances from shore into the sea. Naval surface craft were successful in finding three of the aircraft on the evening of the 10th, but the remaining aircraft was adrift all night, being found, despite a fog, the next morning. The total personnel of eight were rescued, and two of the aircraft were salved by the " Lexington." The other two aircraft sank under tow, friction having caused chafing in the bags with consequent loss of gas.

Fighter Squadrons—Independent Operation.—In order to determine the feasibility of fighter squadrons moving into the field and operating for a short period without the assistance of ground transport, a series of trials are being conducted by the units of the Army Air Corps stationed at Selfridge Field, Mich. Twenty pilots of the 17th Pursuit Squadron recently flew to Harbor Beach, Mich., 85 miles North of the field on Lake Huron. Four transport aircraft carried 41 men and all necessary camp gear. Eight men were allotted to each tent without undue crowding.

It was necessary for the transport aircraft to make several trips between the aerodrome and the advanced base, but it was well established that eight or ten transport aircraft could carry all necessary supplies and ground personnel for this type of squadron. The squadron also flew to Oscoda, where they engaged in various firing exercises.

It is believed that forty men would be sufficient for a few days' operations, but for a period of two weeks or more it would be necessary to double that figure.

REVIEWS OF BOOKS

GENERAL

Imperial Defence and Capture at Sea. By Admiral Sir Herbert Richmond. (Hutchinson). 10s. 6d.

In the introduction to this valuable book Admiral Richmond states that his object is to indicate the nature of these problems in terms comprehensible to all. He succeeds admirably. Had this book appeared a few years earlier it is possible that some of the fallacies which have been accepted on these subjects would have been rejected by a better informed public opinion; in any case, it is to be hoped that it will now have a wide circulation both among the general public and in the Services, and that it will be read especially by politicians and statesmen.

The author discusses these questions from the point of view that defence, in the last resort, depends upon armaments. He fully recognizes that, as an alternative, we might attempt to obtain security through international agreements, but he doubts if these can be relied upon; for, as he says, the history of such agreements "is not one that gives any degree of confidence when such stakes are at issue." The book is divided into two parts, each treating of one of the two subjects mentioned in the title, which, although distinct, are complementary to each other. Imperial Defence is defined as that which affords "security to the persons, the interests and the territories of all the people who form the British Empire." Examples from history are used to show how British policy has always had its roots in Imperial Defence, and it is emphasized that this subject must be regarded as a whole and treated upon broad lines. The author shows that, in the main, security depends upon the safeguarding of Empire communications, and that to keep them intact is a matter of vital interest to "all and each of the members of the Empire." Interesting facts and figures are given in support of this contention, which show how our responsibilities have increased in this respect. The lines along which this security should be provided are clearly indicated.

Admiral Richmond reaches the conclusion that our need is now, as it always has been, for a sufficiency of the type of fighting craft most suitable to secure the safety of our ships whether at sea, or in port, and that the number of these craft cannot be determined by an examination of the numerical lists of those possessed by other Powers, but must primarily depend upon the amount of Empire shipping and the localities in which it operates.

The pages devoted to the subject of naval bases are of considerable interest—and this is perhaps the one section of the book which would be improved by amplification rather than by curtailment—for the importance of suitably placed and equipped bases is perhaps the least understood of all the factors which go to make for security at sea. Few will disagree with the author that the maintenance of such bases is an Empire responsibility. It has nothing to do with any other Power, no matter how adjacent to its coasts a base may be situated. Every base we have is important to us in any war we may have to wage against another naval Power, because every one of them is adjacent to waters through which an enormous amount of Empire shipping normally passes and is therefore necessary for the security of that shipping.

Invasion, whether of these Islands or of other parts of the Empire overseas, is adequately dealt with, and Part I closes with a brief reference to the much debated topic of a Ministry of Defence.

The second half of the book deals with "Capture at sea in war" and is perhaps the best part of the two, although—no doubt inevitably—the reader will find a certain amount of repetition. Admiral Richmond examines the whole of this question in an interesting and entertaining manner. His main contention is that the abolition of the right of capture at sea far from being in the interests of humanity would in reality play into the hands of the profit-seeking neutral. Those who favour the modification of international law in this respect fail to realize that by such means the ability of belligerents to prolong a struggle would be increased with all the killing and maiming that such prolongation would entail.

The pages devoted to "Maritime force in war" are excellent reading, and show how the pressure that can be exerted by the proper use of sea power has in the past had the effect of mitigating the horrors of war, and that its use has been advocated on several occasions with this object in view. Mahan, Dana, and Benjamin Franklin are quoted in support of this contention. This concludes an altogether admirable book, which is well illustrated by reproductions of war photographs having a bearing on the text.

War and Western Civilization, 1832-1932. By Major-General J. C. C. Fuller, C.B., C.B.E., D.S.O. (Duckworth). 10s. 6d.

General Fuller has set himself a hard task and he has approached it in ambitious fashion. He wishes to prove that nationalism, that is the growth of self-contained democracies, has gone hand in hand with a desire for more wars, while these wars, he contends, are tending to become more barbarous. In parallel with this argument he expounds a favourite thesis, that of the incompetence of professional military thought.

His arguments are based on a highly condensed and attractive survey of all the wars of the past century. Opening with a synopsis of the Napoleonic period, as the starting point of "nationalism," he analyses all the campaigns that occurred since the Crimean War to support his thesis. Clearly and cleverly arguing his way through to the Great War, General Fuller seeks to prove that war occupied a definite place in the evolution of Europe to its state of civilization in 1914.

At the same time it seems that General Fuller is not sufficiently clear in distinguishing the political, moral and economic factors that were driving Europe into the abyss of 1914. Many of the small wars of the epoch 1871—1914 had some economic value and could not affect the democracies of Europe as would wars conducted on their own territories. Minor wars, by the economist at least, were, prior to 1914, spoken of as "luxuries which the wealthy nations could afford." Such wars need not have had evil economic after-effects. But wars unquestionably have to be considered from the degree of civilization of the nations that indulge in them; also how far the nations are capable of standing the strain imposed on them. As the result of the war of 1870-71, it had come to be regarded in Europe that (*a*) a war could be supported out of the losses paid to the winner by the loser; (*b*) war stimulated trade; (*c*) the period of recovery from its effects would vary as the duration of the war. Does General Fuller believe that these conclusions can still be upheld to-day?

It is not a question of believing or disbelieving in the probability of war recurring. It seems probable that wars must recur. General Fuller is undoubtedly correct in concluding his book with a paragraph stating that war "is an activity that cannot be charmed away." But we do not altogether agree with him in trying to show that it follows a particular cycle of development, which makes war more probable and more barbarous in proportion as "civilization" grows older. As

the stakes of war grow greater and its outcome more menacing to the losers, so nations unquestionably clutch at any expedient to save themselves from their doom. The author is more correct when, on page 148, he states that "warfare is closely related to lunacy." Democracies are, and will doubtless continue to be, subject to lunacy.

However much we differ from General Fuller's generalizations on this subject, and his headlong mingling of economic, political and military history, we would recommend his work, more particularly that portion outlining a possible conflict between Europe and Asia, to all students of war.

Gordon: The Sudan and Slavery. By Pierre Crabitès. (Routledge & Co.). 12s. 6d.

Having had access to certain documents and Gordon's correspondence with the Khedive of Egypt, which are all stored in the Abdine Palace at Cairo, Mr. Crabitès has written what may be regarded as a partial account of Gordon's work in the Sudan from 1874 up to the time of his death at Khartum in 1885; partial in that it seeks to place a favourable interpretation on all Gordon's actions as well as on Ismael Pasha's attitude towards the questions then at issue. The result is an interesting study with a strong bias of admiration in respect of Gordon's anti-slavery work as Governor-General of the Sudan. His record is a remarkable one and will bear such treatment. Although there does not seem to be so very much that is new in his story, Mr. Crabitès manages to convey a clear impression of the difficulty of the task to which Gordon had set himself. But with time, as Mr. Crabitès shows, Gordon himself realised the fact that he was trying to revolutionize the whole daily life of the Sudan. Slavery he saw in the end was the foundation of Sudanese existence; it could not be swept away in a day. Still, this does not in any way detract from the remarkable results that he achieved. The semi-military operations that he carried through, with inadequate means, and the swift, long days that he spent on camel back, would alone provide materials for a whole series of chronicles.

Mr. Crabitès shows how Gordon and Ismael both came to grief over the question of the Egyptian Debt in 1878. In fact, this whole episode led to a difference of opinion between Gordon and Baring (late Lord Cromer), who was then beginning to act as British representative in Cairo, that had far-reaching results. As Gordon contemptuously put it, Baring was in the nursery when he (Gordon) was in the trenches before Sebastopol; Baring was a young gunner officer, whilst he (Gordon) was a sapper colonel.

Gordon's final mission to Khartum in 1884 is discussed in detail, although not with the same wealth of supporting evidence as was recently put forward by Dr. Bernard Allen. The author also disposes of the legend, chiefly arising out of Mr. Lytton Strachey's thumbnail sketch of Gordon in his *Eminent Victorians* that Gordon was a dipsomaniac addicted to solitary drinking bouts. That Gordon was not a fanatical teetotaler and consumed alcohol is, of course, true. But Dr. Allen had already smashed the libel.

Taking it all round it is a pleasant and sympathetic study of these two periods of Gordon's life.

Escape Fever. By Geoffrey Harding. (John Hamilton, Ltd.). 7s. 6d.

The author served in the Royal Flying Corps during the latter part of the War, and was brought down within the German lines on 1st May, 1917. He was then taken to Karlsruhe, where he remained some three weeks before being trans-

ferred to the prisoners' camp at Ströhen near Hannover. From the outset he decided to escape. His friend, Gerald French, who was brought down at the same time was sent from Karlsruhe to Holzminden Camp. The author begins by giving a good account of the celebrated escape of not less than twenty-nine British officers from Holzminden through a tunnel dug by the prisoners. Out of this total no less than ten succeeded in reaching Holland—and freedom.

Ströhen, where Harding now found himself, was a "reprisal" camp and there is little doubt but that the discipline was unusually severe, while the commandant had clearly been selected for his harshness. Moreover, Karl Niemeyer, the second-in-command at Ströhen " was the greatest exponent of the Prussian ' blood and iron ' policy that ever came into contact with British prisoners." His successor, who came soon after Harding arrived, proved quite a human type of man. " Escape " soon filled the minds of all prisoners, and the whole story of how their attempts first failed and finally succeeded are admirably told in this book. Detectives were even summoned from Berlin to ferret out the means whereby these young British officers were at times able to outwit the commandant and his guards.

The daily life of the camp was full enough of little incidents that showed to the prisoners how the war was going; their treatment by the Germans was to them a barometer of the course of the operations. There were three types of prisoner at Ströhen, " those who had no intention of trying to escape and were quite frank about it; those who said they were going to try but never did so; and those who never lost a favourable opportunity of making an attempt." Harding relates many tales both of unsuccessful and of successful attempts at escape. How he himself escaped is related in great detail, even down to the making of a compass out of extempore materials and a safety razor blade. The story is a most engaging tale of adventure that bears the stamp of truth and seems very fair in its statements.

NAVAL.

Letter Books and Order Book of George, Lord Rodney, 1780-82. Two vols. (New York. Printed for the Navy History Society, 1932).

Three manuscript volumes of Lord Rodney's correspondence and orders, 1780-1782, were purchased out of the Navy History Society Fund from Messrs. Maggs of London, when they came into the market. These are now published in two volumes; the first contains the correspondence, the second the orders.

The correspondence begins in July, 1780, one of the earliest letters referring to the events which led up to the often-discussed capture of St. Eustatius. While Holland was still a neutral, that island, in Rodney's words, constituted " an asylum for (the enemy's) cruisers, from where they received every succour." To prevent this Rodney reports, in August, that he had stationed a squadron of frigates expressly to intercept all " rebel " vessels going to the island; a perfectly legitimate proceeding. The legitimacy of a later act may be open to discussion: the American vessels in the neutral harbour had hoisted their " Pyratical Colours " and insulted the British flag by training their broadsides on a British sloop. Rodney, on the assumption (or as some might say, the pretence) that the Dutch Governor in countenancing this behaviour was either unable or unwilling to prevent it, sent a squadron to St. Eustatius and captured all the vessels. No protest appears to have been made.

The promptitude with which the Admiral struck when war was declared is noteworthy. On the day that that information reached him he laid a strict embargo

upon all shipping and made preparations for the capture of the island. All correspondence was stopped; Dutch pilots, where found, were detained; information and pilots were procured; within two days a squadron was in a position to intercept any vessels attempting to leave the port. St. Eustatius was in his hands within three days of the receipt of news of war.

The references to attack upon trade by privateers are numerous. This is a point to which too little attention has been paid in our naval histories of this war, which have concentrated upon the operations of the major squadrons and fleets. Yet the diversionary effect of this commerce warfare, in which some two thousand vessels appear to have participated from beginning to end, was very far reaching. In one place Rodney reports that as the privateers are swarming off Charleston he is sending a squadron of frigates there and is also stationing a chain of frigates along the southern coast. He is able a little later to report that they have taken eleven of these gentry and forced the others into the shelter of their harbours and river mouths. But all this made a great demand on his frigate and flotilla forces. There is a very familiar ring in his "I must beg you will acquaint their Lordships that there being the greatest want of frigates on this station to carry out the public service, I hope their Lordships will approve my having ordered two of the largest privateers which mounted 22 guns each and remarkable for their sailing to be purchased and commissioned as sloops of war." It is an echo of what all commanders were obliged to say. The "public service" suffered correspondingly. It is not without interest to note that the names of no less than 48 frigates and 59 sloops of war and brigs—the "cruisers" and "destroyers" of that day—are mentioned on that station alone.

Difficulties of manning are constantly referred to and there are several references to the importance of the capture of the enemy's merchant ships in depriving him of seamen to man his privateers. The Assemblies of the islands are shown in the same narrow light described by Sir John Fortescue in his History of the British Army: thinking first and ever of their pockets and hampering the action of the commanders of the naval and military forces. Sickness, of course, is a prominent feature in the administrative orders, and lack of stores. In fact, we find in these letters all those minor—or what appear to be minor—influences which so greatly affect the course of major operations, but which are apt to be lost sight of if campaigns are merely studied in the light of the great battles fought by the fleets. The latter may, in the end, decide the issue, but they not infrequently fail to be decisive for the administrative reasons of sickness, supply, docking, repairs, weather and civil obstruction.

There are some interesting figures of ships' complements. The large proportion of officers—commissioned, warrant and petty—and of marines is striking; also the large number of "Captains' servants" which give a measure of the patronage at a Captain's disposal.

	100-gun ship.	*74-gun ship.*	*32-gun frigate.*	*14-gun sloop.*
Total complement	800	600	220	80
Captains' servants	32	24	8	2
Lieutenants	7	5	2	1
Midshipmen	34	14	6	2
Total commissioned, warrant and petty officers ..	182	135	75	40
Seamen	475	341	95	40
Marines	140	124	50	—

The book is admirably indexed and is a mine of information for those who cannot examine the original documents in London.

Brassey's Naval and Shipping Annual, 1933. Edited by Commander Charles N. Robinson, R.N., and H. M. Ross. (William Clowes & Sons). 25s.

One of the outstanding features of the new "Brassey" is Commander Robinson's criticism of British policy in cruiser construction:—

> "No cruiser was completed for the British Navy during 1932. Only once before since the construction of the vessels of the War programmes was finished has a year passed without some cruiser being passed into service . . . The rate of construction tends to become more prolonged owing to the cuts in the Estimates."

It would be of real assistance to British shipyards in their present dire distress if the naval shipbuilding vote could be increased so as to provide for ships being laid down early in the financial year, instead of at its end as is the present custom.

In another article it is pointed out by Mr. G. H. Hurford that:—

> "At the present rate of building, this country will need to retain on the effective list of cruisers in 1935 no less than nineteen cruisers of obsolete types even to make up a total of fifty ships, as the ships within the age limit in 1935 will number only thirty-one. This has been well described as disarmament by procrastination."

Last year was the first since 1922 in which any country has laid down a large capital ship. As explained in the chapter on foreign navies:—

> "Germany, who it had been assumed was banished from any threat of further competition in armaments, proved to be a stumbling block, not merely to the reduction of the fighting forces of other nations, but even to the continuance of the long drawn-out Conference on the subject."

As a direct result of the steady pursuance of the German programme of four 10,000-ton pocket battleships, France is now building the 26,500-ton battle cruiser 'Dunkerque," with a superiority in speed of 3 knots, and a main armament of eight 13-inch guns against the six 11-inch of the "Deutschland" and her sisters.

Proceedings at the Disarmament Conference are ably summarised by Captain A. C. Dewar, R.N., who cannot resist the conclusion that:—

> "Peace does not lie in material but in 'moral' disarmament, and where there is no strong or universal impulse in this direction, diplomatic discussions are fated to remain as futile as the hammering of cold iron."

Sir George Thurston, after comparing the salient features of the latest capital ships of the six principal navies, forecasts the lines on which the battleship of the future is likely to develop. His arguments are illustrated by the design of a capital ship of 25,000 tons and 22 knots sea speed, with an armament of twelve 12-inch guns.

The Merchant Navy section contains articles dealing with British Shipping Policy, the Safety and Load Line Conventions—including the new helm orders, Notable Merchant Ships of the year, and Marine Aviation.

As always, the Annual is a vast store of invaluable information and records, and a model of editing and production.

Jane's Fighting Ships, 1932. 36th Year of Issue. Edited by Oscar Parkes. (Sampson Low). 42s.

As an album of warship portraiture there is nothing to compare with "Jane." Of late years an additional attraction has been the inclusion of illustrations based on plans of ships still on the stocks. Cruisers so depicted in the present volume include the British "Arethusa," French "Algérie" and "Emile Bertin," Italian "Bolzano" and "Cadorna," Dutch "Celebes," Spanish "Baleares," and American "Astoria" and "Indianapolis."

Of even greater interest is the drawing of one of the three U.S. battleships of the " New Mexico " class as they will appear when reconstructed at a cost of thirty million dollars. When their transformation is complete, they will be to all intents and purposes new ships, of a design which owes something to the " Nelson." The alterations include new masts and bridges, bulges, extra armour, improved elevation of the 14-inch guns and turbine engines of the latest pattern. This goes considerably beyond the reconstructions imposed on the older battleships of the " Pennsylvania," " Nevada " and " Texas " classes.

Of the numerous fresh photographs, that of the Japanese cruiser " Atago " is bound to command most attention. Her grotesque silhouette, with its two contrasting funnels and queer foremast, well maintains the reputation of Japanese naval constructors for originality in warship design.

Few fresh facts are to be gleaned from the description given of the French battle cruiser " Dunkerque." She is credited by " Jane " with a speed of 29 knots on a displacement of 26,500 tons. A note explains that there have been a variety of designs for her armament, but it is now given as nine 13.2-inch, eight 6-inch and twelve 4-inch anti-aircraft guns. Since the annual was printed, however, an official statement has made known that the main armament is to be eight 13.2-inch guns in two quadruple turrets—one forward and one aft; while the secondary armament is to be sixteen guns of 6.2-inch calibre, which are to be mounted twelve in three quadruple turrets in the after part of the ship and four amidships in two double turrets. In any case, such a ship is a sufficiently emphatic reply to Germany's 10,000 ton " Deutschland," with her main armament of six 11-inch guns and speed of 26 knots. But is a single " Dunkerque " to be reckoned the equal of a squadron of four " Deutschlands " ? Unless the international situation undergoes material alteration this year, it seems reasonable to assume that a second " Dunkerque " will soon be ordered.

Although the text of the book has been more thoroughly revised than last year, there are sundry eccentric spellings, such as " Boadicia," " Brasen," " Redoubtable " (for " Redoutable ") and Ratean (for Rateau), while the " Skylark" is stated to have been built in 1923 instead of 1932.

Tigris Gunboats. By Vice-Admiral Wilfrid Nunn, C.B., C.S.I., C.M.G., D.S.O. (Andrew Melrose, Ltd.). 18s.

At a time when one of our main interests in the Gulf has been threatened by Persian designs on British-leased oilfields, it is of particular interest to read an account of the combined operations in which we engaged originally, during the War, in order to safeguard the Tigris delta and the oil-pipe terminus at Abadan. But, as so very often happens, this small beginning expanded into a great campaign; and we see the forces, ashore and afloat, thrusting further and further inland until their efforts culminated in the capture of Baghdad.

Admiral Nunn not only describes vividly and modestly the adventures of his gallant flotilla, but gives a kindly and only mildly critical account of practically the whole Mesopotamia campaign, centring as it did on the Tigris and Euphrates Rivers. The part which ships and shore forces can play, acting in close association in and near an inland waterway, is a form of combined operation which should be studied a great deal more than it is. The " opposed landing " is a stock exercise whenever the Services meet for joint work in peace time; but it is doubtful whether a campaign of the latter character—certainly one on the grand scale of the Dardanelles—will ever be attempted again. On the other hand, the Navy and Army have repeatedly found themselves engaged in a River Expedition, and

it is not at all improbable that all three Services will find themselves so employed in the not too distant future. At the outset, mistakes are nearly always made in such operations because neither the authorities at home nor the commanders of the forces employed have troubled to read accounts of such expeditions, much less are they studied seriously at the Staff Colleges.

Here, then, is an admirable book to help to fill this omission in Service reading. It will impress the student with certain ever-recurring characteristics in this class as, for instance, the advantages possessed by river gunboats as a means of outflanking an enemy, and their mobility as a form of heavy artillery; but he should also note the limitations of ships when held up by mines, shallow water and other river obstructions. Above all, he should be impressed with the dangers which are liable to attend a naval force which pushes ahead of its flanking support on either bank of a river, likewise the disasters which may befall a military force dependent on water transport for its supplies and reinforcements if it outstrips the naval support of the flotilla.

This most interesting and instructive book is brightened by a number of excellent photographs. There are also adequate maps and an index.

ARMY

The Memoirs of Marshal Joffre. Translated by Colonel T. Bentley Mott, D.S.M., C.M.G. In two volumes. (Geoffrey Bles). 36s. two vols.

The Memoirs of Marshal Joffre have recently appeared in French and this translation will be welcome although, from the purely technical point, it suffers from its trans-Atlantic origin with a slight consequent disregard for British military phraseology.

To most readers Joffre will stand out from these pages as a greater commander than he has frequently been regarded. Very wisely, the Marshal devotes much space in Volume I to relating his share in the direction of the military policy and preparations of France during the critical years preceding the outbreak of war in 1914. It is a remarkable story. French military preparations had been allowed to sink very low; money had been stinted; high places in the Army had been filled—often not as the result of merit but on account of political influence. Against heavy odds, Joffre, a member of the *Conseil Supérieur de la Guerre* since 1910, and Chief of the General Staff from July, 1911, undertook the task of setting the military machine in order. He deserves well of his country for what he was able to achieve; although in the matter of suitable appointments the task, as he shows, seems to have been beyond his strength. In spite of this he undoubtedly saved his country from disaster. But this was not everything.

In addition to material difficulties there was the great question of the War Plan to be solved. Plan XVII, finally adopted, is now universally condemned. General Michel, Joffre's predecessor, had unquestionably originated the correct reply to the actual German offensive of 1914 in his own mind. But, as Joffre shows, Michel failed to carry the political authorities with him in his proposals, for he desired to incorporate Reserve units in the active armies, a course which would lead to great political difficulties. Without such a step his Plan was impossible. So he was shelved. Joffre's Plan XVII finally came to be adopted. It was a makeshift. But it was none the less a makeshift that had solid, if mistaken, reasoning behind it. The crux of the problem lay in the neutrality of Belgium. Given that France observed Belgian neutrality, and acted as though that neutrality would be respected, then Plan XVII had some basis to rest upon.

Analogous reasoning applies to the doctrine of the offensive as preached in France before the war, though here it is not so easy to believe that Joffre did not go astray.

With the outbreak of war there is less that is new in these volumes. From the first day of mobilization until 5th September, Joffre follows the French Official History of the War, which does not yet go beyond that day (and only begins again with 1915). From 5th September the memoirs are disappointingly meagre. Little that is fresh is said which illuminates the controversy as to whether Joffre or Galliéni was primarily responsible for the "manœuvre" of the Marne. It may thus be taken for granted that Commandant Müller's account is substantially correct. Throughout this period Joffre is inclined to be critical of his British Allies, and is querulous as to the response he obtains from them.

Volume II is totally different in character and deals with the whole years 1915 and 1916 rather briefly. The Marshal exposes his grounds for the strategy that underlay the unsuccessful attacks of 1915, which render them more intelligible; although he does not dispel the idea that, at Loos at any rate, the British were unwillingly dragged into an unnecessary battle. On the other hand, the Marshal is strong in his appreciation of British loyalty to him throughout these years. It is a pleasant contrast to some of the earlier things that were said of their Allies by many Frenchmen. He has, also, some rather surprising remarks to make concerning Maréchal Pétain, who will not emerge from these Memoirs with any heightened credit.

The book closes with Joffre's journey to the United States.

The full difficulty of the task that confronted Joffre at the opening of the war can only be realized when these pages have been read. For a comprehension of the gravity of the situation and how it was met these two volumes are indispensable. Incidentally, it may be asked why they could not be produced more cheaply—they are about three times the price of the French edition.

From Mons to the First Battle of Ypres. By J. G. W. Hyndson, M.C. (Captain late The Loyal Regiment.) (Wyman & Sons). 5s.

This is a plain, ingenuous narrative by a young regimental officer who went out with his regiment in August, 1914, to France, whence he was invalided home in February, 1915. The simple narrative does not contain much that is new, but supplies many interesting sidelights on how men adapt themselves to war conditions. It shows their eagerness to find any distraction from the strain of battle, their relief at receiving letters or parcels from home, and their joy at finding the means of indulging in a bath. The tale is not free from mistakes as when the author talks of 16-in. shell falling in the firing line on the retreat from Mons. Nevertheless, it is the sort of book that might usefully supplement the young officer's task in grappling with military history as served up for examination purposes.

Military History for the Staff College Examination. By Captain E. W. Sheppard, O.B.E., M.C. (Gale & Polden), 6s. 6d.

Ten campaigns are summarized in this book within one hundred and twenty pages. It is a result that is obtained by condensation of a most severe order. These ten summaries are in each case followed by (*a*) very brief hints as to books for further reading; (*b*) notes on a few salient features of the campaign; (*c*) a few questions on that campaign; (*d*) suggested answers to these questions. Within so small a compass the author may be congratulated on having achieved

the task he set out to do. There are a few points which we may take exception to, such as the omission from the books recommended for further study, of Grouard's admirable and lucid account of the 1815 campaign; again the author seems to have somewhat cursorily treated Joffre's strategy of 1915, which, even admitting its failure, is not without interest nor unprofitable for study. In any case, as far as it goes, the volume can be recommended for examination purposes.

When, however, we consider the motives that lie behind the production of such a book, we must begin to question the value of the system which prompts military students to turn to such works. Military Law, Organisation and Administration are, when all is said and done, a matter of memory and of capacity to apply known facts and principles. Military history stands on a different plane. Memorizing mere facts and the hard and fast application of rigid "principles of war" can never teach any officer to become a great leader; yet this is what we are compelling them to do under our present methods of utilising Military History. This book is a typical example. How can one hope to impart even the barest outline of the finesse and skill of Buonaparte's delicately balanced campaign of 1796 in two or three pages. The crammer can never aspire to get the best out of Military History, and good though it is within its limits, this book is after all a compendium of crammer's notes.

What is the Territorial Army? By Colonel G. R. Codrington, C.B., D.S.O., O.B.E. With a Foreword by General Sir Charles H. Harington, G.C.B., G.B.E., D.S.O. (Sifton Praed). 4s. 6d.

The object of this little work is to enable Regular officers to understand the Territorial Army better than is done in many quarters to-day. Within the compass of some 100 pages the author does his work quite simply and satisfactorily. He discusses briefly the history and organization of that Army from the time of the Haldane reforms to the present day, and then has something to say in turn on subjects such as Recruiting, Finance, Discipline, Interior Economy and Training. He ends with a few pages on the Territorial spirit. The book is based on Territorial Army Regulations, 1929, as amended to August 1932. General Harington emphasizes the need that exists for every Regular to understand the Territorial soldier. The book should enable the former to do so; it might well find a place in every Regular ante-room.

The Romance of Regimental Marches. By Walter Wood. (Clowes & Sons). 6s. od.

This little volume contains in brief the origin and history of all the regimental marches in use in the Army and in the Royal Air Force. It opens with an introduction of some twenty pages, in which the entire subject is treated in a general and historical fashion. This is followed by a special section devoted to the march or marches of each regiment of the Army arranged by Army List seniority. Where a regiment possesses, or has possessed, more than one march, the story of each of these is given. Though incomplete and not literally accurate in minor details, it is an interesting production and may prove a useful book of reference.

Cirenaica pacificata. By General R. Graziani. (Milan, Mondadori). 30 lire.

General Graziani's volume is a semi-official account of the military operations whereby the Italian forces pacified Cyrenaica and cleared it of the rebel bands which were holding up orderly settlement. The author was himself Lieutenant-Governor and C.-in-C. of the colony, and it was under his auspices that these

operations were carried out. The problems to be faced were of a threefold nature. The enemy consisted of several armed *dors* or bands, not strong in numbers, but able to find recruits among the native population to replace all casualties. The leaders, the Senussi, had such a hold over the inhabitants of Cyrenaica for religious reasons that they could always secure from them supplies of food and ammunition. The third difficulty was transport in a vast area with few oases scattered over a largely desert country. General Graziani, on taking over command in 1929, first proceeded to disarm the native population and to concentrate the nomads in camps along the coastal belt, thereby preventing them from maintaining contact with the enemy. His own forces, some 13,000 men in all, comprised native formations which, unlike those in Tripolitania, whose loyalty was unswerving, were not wholly reliable. He therefore disbanded the doubtful units, which he replaced with Eritrean troops. The only other source of supplies on which the enemy could now draw was Egypt, and General Graziani put up a wire entanglement along the Egyptian frontier extending nearly 180 miles from the coast, to a point beyond which the desert made contraband practically impossible. The actual military operations commenced in June 1930, when the Faied area of the Gebel was cleared of the bands under Omar el Muktar, the Senussi chief who had deserted from the Italian service. At the end of the year the Kufra oasis was occupied: a particularly difficult undertaking owing to the great distance to be traversed—over 500 miles of desert. Heavy losses were inflicted on the enemy. Finally, in September 1931, a rebel force was totally routed in the Ain Lafu area and Omar himself captured; two months later his successor Yusuf bu Rahil was killed in the Marmarica district. This quashed the rebellion, and the remaining tribes made complete submission to the Italians. The main interest of the book lies in its account of how the desert operations were carried out, and the difficulties of supply and transport overcome.

The Italian Air Force played an important part, both in bombing the enemy camps and bases and in reconnaissance.

REGIMENTAL HISTORIES

The History of the Royal Scots Greys (The Second Dragoons), August 1914—March 1919. Compiled by a Committee of Officers for private circulation. With a Foreword by General Sir Philip W. Chetwode, Bt., G.C.B., K.C.M.G., D.S.O.

This regiment fought throughout the Great War in France, playing a distinguished part in the operations of 1914, and again in 1918. During the intervening years there was little scope for cavalry as such on the Western Front. The story occupies some 170 pages of the volume and is arranged after the manner of a diary with daily entries. There are some 50 pages of appendices.

The History of the Welch Regiment. Two parts in one Volume.
Part I, 1719—1914. By Major A. C. Whitehorne, O.B.E.
Part II, 1914—1918. By Major-General Sir Thomas O. Marden, K.B.E., C.B., C.M.G. (Cardiff, Western Mail & Echo, Ltd.)

The first part of this history deals with the early history of the 41st Regiment from 1719, and with that of the 69th Regiment from 1758 onwards. The units were linked and territorialized as the Welch Regiment in 1881, being allotted to South Wales. The 1st Battalion fought in South Africa; also the 3rd Reserve Battalion.

The second part is devoted solely to the Great War. In addition to the seven then existing battalions of the Regiment no less than twenty-seven were at one

time or another raised. The 1st Battalion reached France with the 28th Division in January, 1915; the 2nd Battalion having gone out with the 1st Division on mobilization. The remaining units fought in France: in the later Gallipoli operations; in Egypt from the first battle of Gaza until the Armistice; at Salonika throughout those operations; in Mesopotamia from the attempt to relieve Kut until the end. The narrative is divided into chapters representing the various operations, each chapter being split up into paragraphs after the manner of a diary.

There are several maps and diagrams, some photographs and several appendices.

The Essex Regiment. Essex Territorial Infantry Brigade (4th, 5th, 6th and 7th Battalions), also 8th (Cyclists) Battalion, The Essex Regiment. By John W. Burrows, F.S.A. (Burrows, Southend). 5s.

This volume deals with the history of the four Territorial battalions of the Essex Regiment, together with its Cyclist Battalion. As the four battalions served as a single brigade, the 161st, during the entire Great War, the author treats of the brigade as a unit, throughout the book. After devoting a few pages to the origins of the Essex Volunteers and another brief section to the South African War, he devotes over 300 pages of tightly packed narrative to the work of the brigade, first at Gallipoli, where it participated in the Suvla operations, and then to the whole Palestine campaign, where it served to the Armistice. There are numerous photographs, a good index and two battle plans. The price is remarkably low for such a book.

AIR

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"All the World's Aircraft" continues to hold its position among the half-dozen most valuable aeronautical reference works. This year many additions have been made with the result that the work is more comprehensive than ever. The British section, for example, contains 95 new illustrations this year against 84 last year and the section occupies in all 79 pages against 71 last year. The French and Italian sections also show large increases and, judged by this volume, air affairs, as Mr. C. G. Grey points out in the preface, must have been singularly active during 1932. Almost every part shows some increase and in the entire aeroplane section there are 427 new illustrations against 346 new illustrations last year.

Some of these new illustrations are remarkably good, not only when regarded as photographs, but also when regarded as informative documents, and the general level of reproduction is high. Mr. Bridgman, Mr. F. D. Bradbrooke, Mr. Thurstan James and Mrs. C. M. McAlery are to be congratulated upon their work of compilation and upon the way in which they have succeeded in condensing the information without omitting any of the really important facts. Perhaps the thing which chiefly impresses itself upon the reader is the large number of unconventional types of aircraft still being made. There seems still to be no positive settling down to any one general type, and we find tail-less aircraft, autogiros, telescopic wing aircraft and aircraft with what amount to variable camber wings, with automatic wing slots and wing flaps. The historical notes are copious and accurate in both the civil and the service sections.

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